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UNITED STATES
DEPARTMENT OF
AGRICULTURE

FOREST SERVICE
SOUTHWESTERN REGION
TONGO NATIONAL FOREST

Final
Environmental Impact Statement
for

Cyprus Miami Leach
Facility Expansion Project
Miami, Arizona



UNITED STATES
DEPARTMENT OF
INTERIOR

BUREAU OF LAND
MANAGEMENT
ARIZONA STATE OFFICE
PHOENIX FIELD OFFICE



U.S. ARMY CORPS OF
ENGINEERS
LOS ANGELES DISTRICT

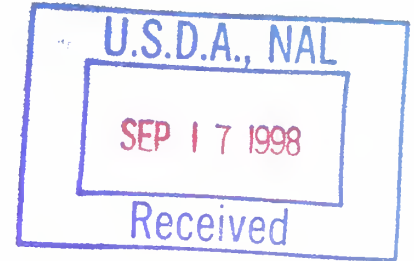
June 1998

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Agriculture**



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**FINAL
ENVIRONMENTAL IMPACT STATEMENT
CYPRUS MIAMI MINING CORPORATION
LEACH FACILITIES EXPANSION**



BLM EIS No.: BLM/AZ/PL-98/0014

Lead Agencies: U.S. Department of the Interior, Bureau of Land Management
U.S. Department of Agriculture, Forest Service

Cooperating Agency: U.S. Army Corps of Engineers

Project Location: Miami, Arizona

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Date Final EIS was made available to the Environmental Protection Agency and the Public:
June 26, 1998.

Any Comments Must be Postmarked No Later Than 30 days from the EPA Notice of Availability in the Federal Register.

ABSTRACT

The Final Environmental Impact Statement (FEIS) provides responses to comments received by Bureau of Land Management and Forest Service during the public comment period on the Draft EIS (DEIS). The DEIS analyzed impacts that may occur from the proposed new facilities to support the continuation of the copper mining operations at Cyprus Miami Mining Corporation's mine in Miami, Arizona. The proposed action includes: 1) constructing three new leach facilities and 2) constructing a new waste rock disposal area each located on a combination of private land and lands administered by both the BLM and Forest Service. Three alternatives were analyzed in detail in the DEIS: The Proposed Action, Alternative A - Modified Development Sequence and the No Action alternative. The Proposed Action and Modified Development Sequence Alternatives would extend the life of the mine from 16 to 20 years, with final closure around 2021. Total land disturbance associated with the two action alternatives is estimated at 1,057 acres. Alternative A was developed by the joint-agency Interdisciplinary Team and proposes construction of the facilities in a different time sequence in order to delay or eliminate potential impacts to water and biological resources. Alternative A is the Agency Preferred Alternative for these reasons and because a net decrease in air emissions would result. Alternative A was also determined to be the least environmentally damaging practicable alternative (LEDPA). The No Action alternative would involve continued open pit mining operations on private lands at a reduced rate with closure in approximately 2017.



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1.1 AGENCY'S PREFERRED ALTERNATIVE

The Preferred Alternative consists of constructing three new leach facilities (referred to as the Oxhide facility, the BL facility, and the GMC facility) and one waste rock disposal site (Barney waste rock disposal site) (**Figure 2-3** in the DEIS), together with the required ancillary facilities such as access/haul roads, solution pipelines, and surface water control structures. The leach facilities would be used for placement and subsequent leaching of copper-bearing ore mined from reserves located on lands owned by Cyprus Miami. The Preferred Alternative components would be constructed on a combination of private lands owned by Cyprus Miami and mining claims on lands administered by BLM and the Forest Service. Land ownership for individual project components is shown in **Table 2-1**, (Section 3.8.1, and **Figure 3-14** Land Ownership, in the DEIS).

Material placed on the lined leach pads would be treated and rinsed with sulfuric acid solutions. The copper-bearing leach solution draining from these leach pads would be collected and treated in the company's existing solvent extraction and electro-winning plants to produce high quality cathode copper. The waste rock disposal site would be constructed to accommodate uneconomic or non-mineralized material removed from the active mining operation. Ore and waste rock would be hauled from existing pits. Haul roads and service roads would be regularly watered and/or treated with a dust suppressant to minimize dust generation. All operations would be conducted throughout the calendar year and no seasonal or other temporary shut-downs are anticipated.

To monitor protection of local groundwater resources, monitoring wells have been installed at numerous sites downgradient from the proposed facilities, solution ponds, and leach solution transfer diversion systems. These wells and the leach facilities would be regularly monitored to detect any threat to groundwater quality.

Under present assumptions, the Oxhide, BL, and GMC leach facilities and Barney waste rock disposal site would operate for 14 years. Development of the proposed leach facilities would enable continuous ore placement from the mine at an average annual rate of 29 million tons through 2011, which represents the final year of the current planning schedule.

Cyprus Miami has expanded its ore placement rate to produce approximately 160 million pounds of copper per year. The use of the new leach facilities would allow continued production at this increased rate from 1997 through 2011. The year 1997 has been used numerous times in the DEIS and FEIS. That year was a conceptual date for initiation of the project. Actual construction will occur later following the approval dates of the Plan of Operations. Total copper recovery from commencement of the proposed expansion facilities through closure in approximately 2021 is estimated at 2.8 billion pounds.

Construction and operation of the proposed leach facilities would be scheduled and coordinated to make maximum use of existing staff and equipment, wherever possible. It is anticipated that the necessary materials haulage equipment, such as trucks, dozers, and graders, would be

reassigned from current mine activities along with the required operators. Outside contractors may be used, if necessary, for specialized and short-term tasks associated with site preparation, crushing of Gila conglomerate materials for leach pad liner foundations, and liner installation. No new employees are expected to be hired.

Residual copper recovery would continue for approximately 10 years after mining ceases, and then the work force in the solvent extraction and electro-winning plants would also face reductions as copper recovery ended.

The Preferred Alternative (Modified Development Sequence) is identical to the Proposed Action in the DEIS but with different dates for construction of the Oxhide and GMC leach facilities. The approximate dates of leach facility construction for both alternatives are shown below.

<u>Proposed Action Alternative in DEIS</u>		<u>Agency's Preferred Alternative Modified Development Sequence</u>	
BL Leach	1997	BL Leach	1997
Barney Waste Rock	1997	Barney Waste Rock	1997
Oxhide Leach	1999	GMC Leach	1999
GMC Leach	2004	Oxhide Leach	2004

This construction sequence of the Preferred Alternative was developed by the joint-agency Interdisciplinary Team as a proposal which might delay or potentially avoid disturbance to the resources at and adjacent to the Oxhide site. Of the four sites that make up the Proposed Action, the Oxhide site represents the greatest potential risk to natural resources. Resources within the facility site include a pond containing longfin dace and two reaches of willow riparian habitat. Adjacent resources include Bloody Tanks Wash and domestic groundwater wells.

Rationale for developing this alternative is twofold. First, delaying construction of the Oxhide facility may allow for incorporation of future solution control technologies that could result in fewer impacts to resources contained within or adjacent to the footprint of that facility. Second, alternative sites for leaching facilities may be recognized as the corrective action plan (CAP) is developed for the nearby Webster Lake drainage area, located partially on lands owned by Cyprus Miami. The former Webster Lake area and CAP are described below. This could potentially allow for a future modification to the Operating Plan that could eliminate the Oxhide site altogether.

Solution control technology for copper heap leaching is fairly new and has undergone tremendous evolution over the last few years. By delaying construction of the Oxhide facility for seven years following approval of the Operating Plan, Cyprus Miami would have additional time to obtain knowledge of control technology, not only from the development of their GMC and BL facilities, but also from other large mine projects in the region. If advances are made in the control technology for copper heap leaching, these improvements could be incorporated into the final design for the Oxhide facility. Implementation of future best available technology could more effectively achieve mutual goals of protecting natural resources and efficient recovery of copper laden solutions.

The historic Webster Lake drainage area is within the Pinal Creek drainage. Pinal Creek has been designated by the State of Arizona as a Water Quality Assurance Revolving Fund (WQARF) site. WQARF sites utilize State funds to implement water quality improvement activities. Private entities then reimburse the State's WQARF fund for monies expended. A current source study is underway in the historic Webster Lake area to characterize the extent of contamination created by historic mining activities and to identify an appropriate CAP. The Arizona Department of Environmental Quality indicates that the investigation and development of the CAP for Pinal Creek would be completed within the next five years, and incorporation of leaching facilities into the former Webster Lake drainage area could be evaluated as an element of the CAP. Delaying development of the Oxhide facility may provide an opportunity to develop a leach facility at the former Webster Lake area, if the CAP allows for such uses at the site. This could potentially result in a modification of Cyprus Miami's Operating Plan at some time in the future that would eliminate Oxhide as a leach site.

1.2 OTHER ALTERNATIVES

The analysis of alternatives in the DEIS included the Proposed Action, the No Action Alternative, and Alternative A - Modified Development Sequence Alternative (Agency's Preferred Alternative). In addition, the DEIS screened 11 other alternatives before eliminating them from detailed analysis. The alternatives considered but eliminated were designed to address the numerous issues raised during scoping and especially how best to accommodate mineral development while protecting other resources on lands managed by BLM and FS. A full description of all alternatives is presented in Chapter 2 of the DEIS.

The National Environmental Policy Act, as interpreted through the regulations promulgated by the Council on Environmental Quality, requires that the Record of Decision for any Federal action also identify the "environmentally preferable" alternative. Because mining is, by its nature, disruptive to the resources in the immediate area being mined, none of the "action" alternatives is environmentally preferable. Rather, the no action alternative would result in the least disturbance to the environment.

Under Army Corps of Engineers guidelines at 40 CFR 230.10(a) concerning alternatives, the DEIS must demonstrate that the chosen alternative is the least environmentally damaging practicable alternative (LEDPA) to meet the project purpose. The Proposed Action and Alternative A were very similar to each other in environmental impacts. The fact that Alternative A was predicted to have reduced air emissions compared with the Proposed Action and to have a greater potential to reduce impacts from development of the Oxhide site has led the agencies to determine Alternative A to be the LEDPA.

1.3 ENVIRONMENTAL CONSEQUENCES SUMMARY

Table 1-1 presents a comparison of various elements of the alternatives, including construction and operation. **Figure 1-1** illustrates a comparison of the alternatives for ore placement, for construction of facilities, and for mine closure. Detailed discussions of anticipated impacts from implementation of the alternatives are presented in Chapter 4 of the DEIS, and are summarized in **Table 1-2**.

Table 1-1. Summary Comparison of Facilities and Operations by Alternatives

Project Element	No Action	Proposed Action	Alternative A (Modified Development Sequence)
Ore Placement	Until 2007 @ 10% reduction per year Total = 263 million tons ²	Until 2011 or Beyond ¹ @ 29 million tons/yr Total = 487 million tons ³	Same as Proposed Action
New Leach Facilities	No new facilities on public land.	BL 1997 ⁴ Oxhide 1999 GMC 2004	BL 1997 ⁴ GMC 1999 Oxhide 2004
Waste Rock Placement	Until 2007 with a 10% reduction each year. Total = 832 million tons ⁶	Until 2011 or beyond ¹ @ 62 million tons/yr Total = 906 million tons ⁵	Same as Proposed Action
New waste rock disposal sites constructed on public land	None	Barney 1997	Same as Proposed Action
Acres of new disturbance	Public - None Private - 151	Public - 771 Private - 286	Same as Proposed Action
Copper Recovery during Mining	55 million lbs/yr through 2007. 1.0 billion lbs total	160 million lbs/year through 2011. 2.8 billion lbs total	Same as Proposed Action
Copper Recovery - Residual (post-mining)⁷	10 million lbs/yr from 2008 to 2017	10 million lbs/yr from 2012 to 2021	Same as Proposed Action
Site Closure	Leach Facility closure begins 2007. Final leach facility closure: 2017. Residual copper production until 2017. ⁷ Final reclamation completed 2022.	Leach facility closure begins 2011. ⁸ Final leach facility closure: 2021 Residual copper production until 2021. ⁷ Final reclamation completed: 2026	Same as Proposed Action

¹ The information in this table represents no further mining after the expansion under the Proposed Action. However, it is reasonable to assume that Cyprus Miami will identify minable reserves in the area and will continue operations beyond this proposed expansion project.

² Denotes total volume of ore that can be placed on existing facilities on Cyprus Miami lands.

³ Denotes total ore that can be placed on private and public land as a result of approval of the Proposed Action.

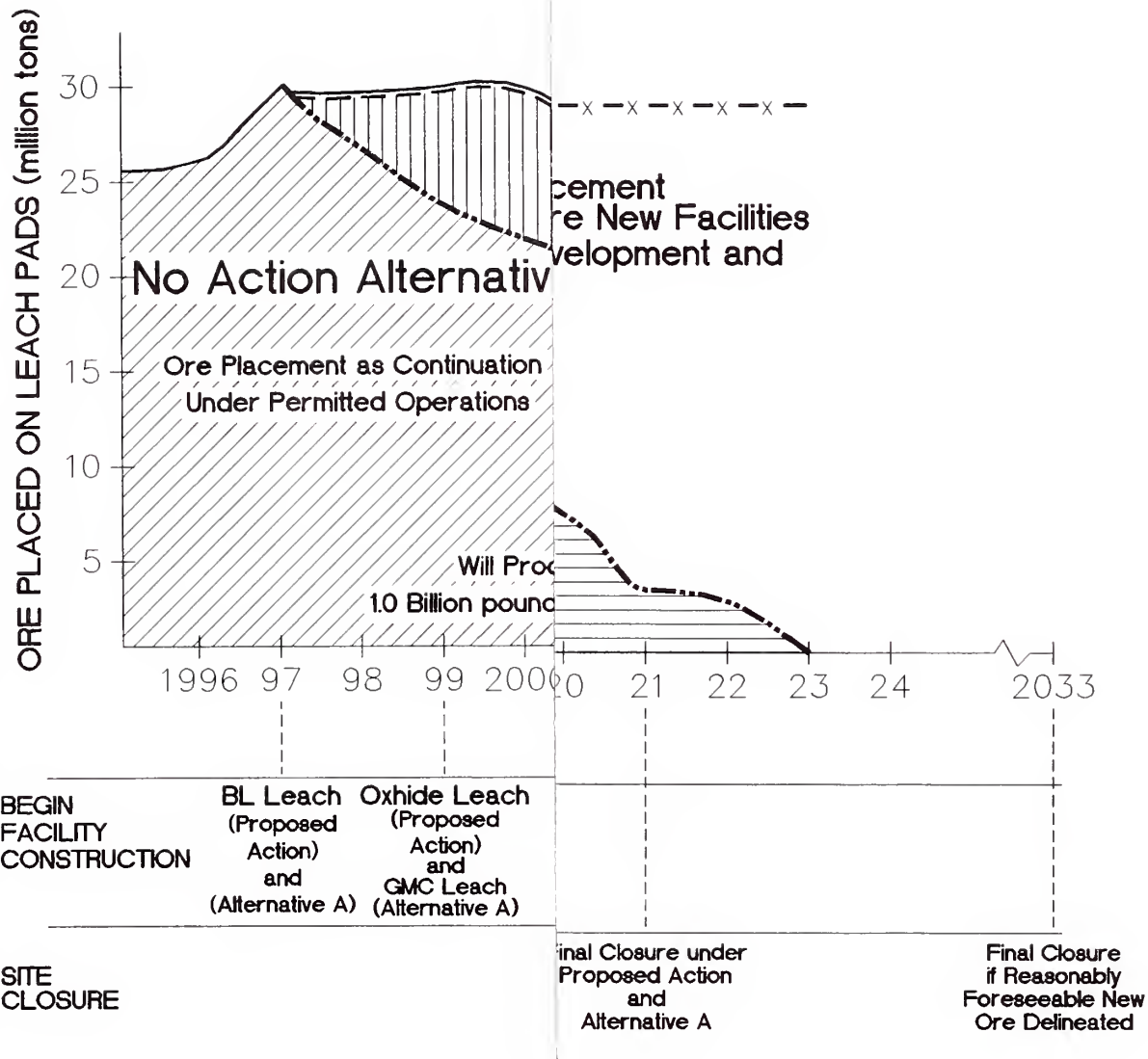
⁴ Denotes year conceptual construction begins.

⁵ Denotes total waste rock that can be placed on private and public land as a result of approval of the Proposed Action.

⁶ Denotes total waste rock that can be placed on existing facilities on Cyprus Miami lands.

⁷ Leach facility closure involves a ten-year period of heap leach solution recirculation which allow for residual copper production up to ten-million tons/year following final placement of ore.

⁸ If new ore is delineated all site closure dates for the Proposed Action and Alternative A could be delayed.



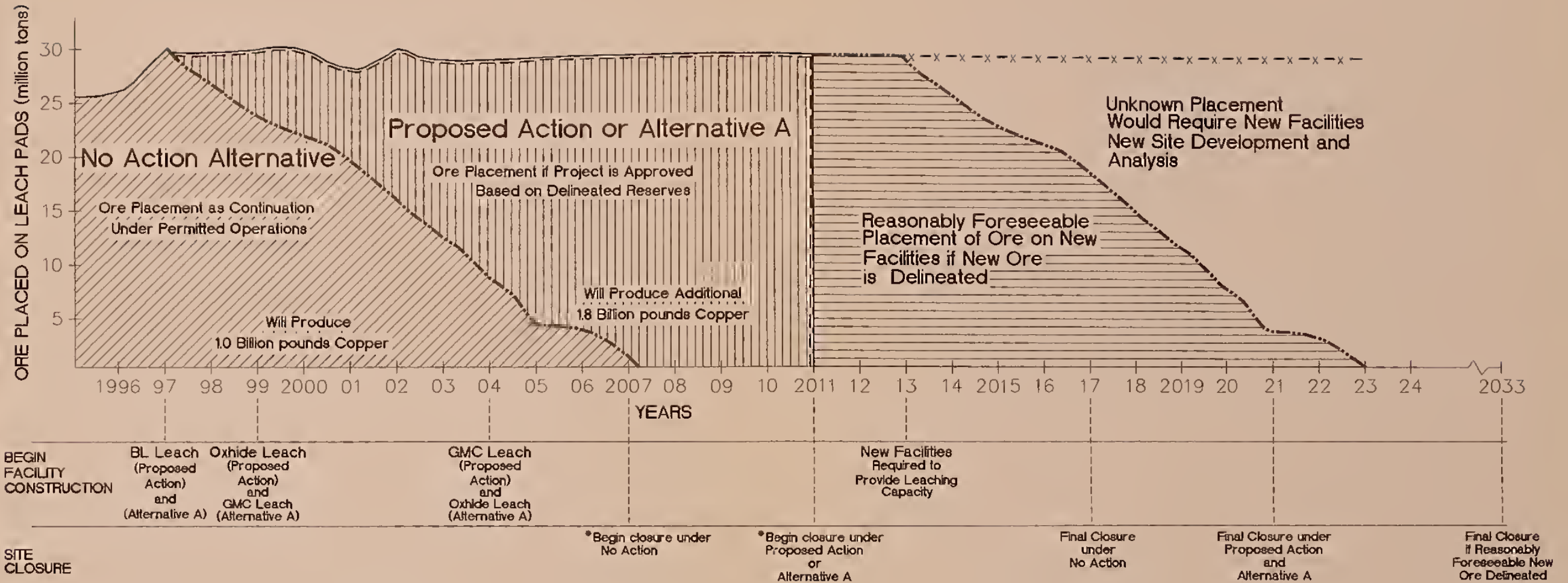
*Note: After ore placement ceases, The of residual copper recovery through leaching solution until no longer closure would occur after residual (approximately 10 years).

Cyprus Miami Mining Corporation
Leach Facility Expansion EIS

Figure 1-1
COMPARISON OF ALTERNATIVES FOR

- ORE PLACEMENT
- CONSTRUCTION OF FACILITIES
- MINE CLOSURE

GREYSTONE



*Note: After ore placement ceases, There would be a period of residual copper recovery through recirculation of leaching solution until no longer economical. Final site closure would occur after residual copper recovery (approximately 10 years).

Cyprus Miami Mining Corporation
Leach Facility Expansion EIS

Figure 1-1
COMPARISON OF ALTERNATIVES FOR

- ORE PLACEMENT
- CONSTRUCTION OF FACILITIES
- MINE CLOSURE

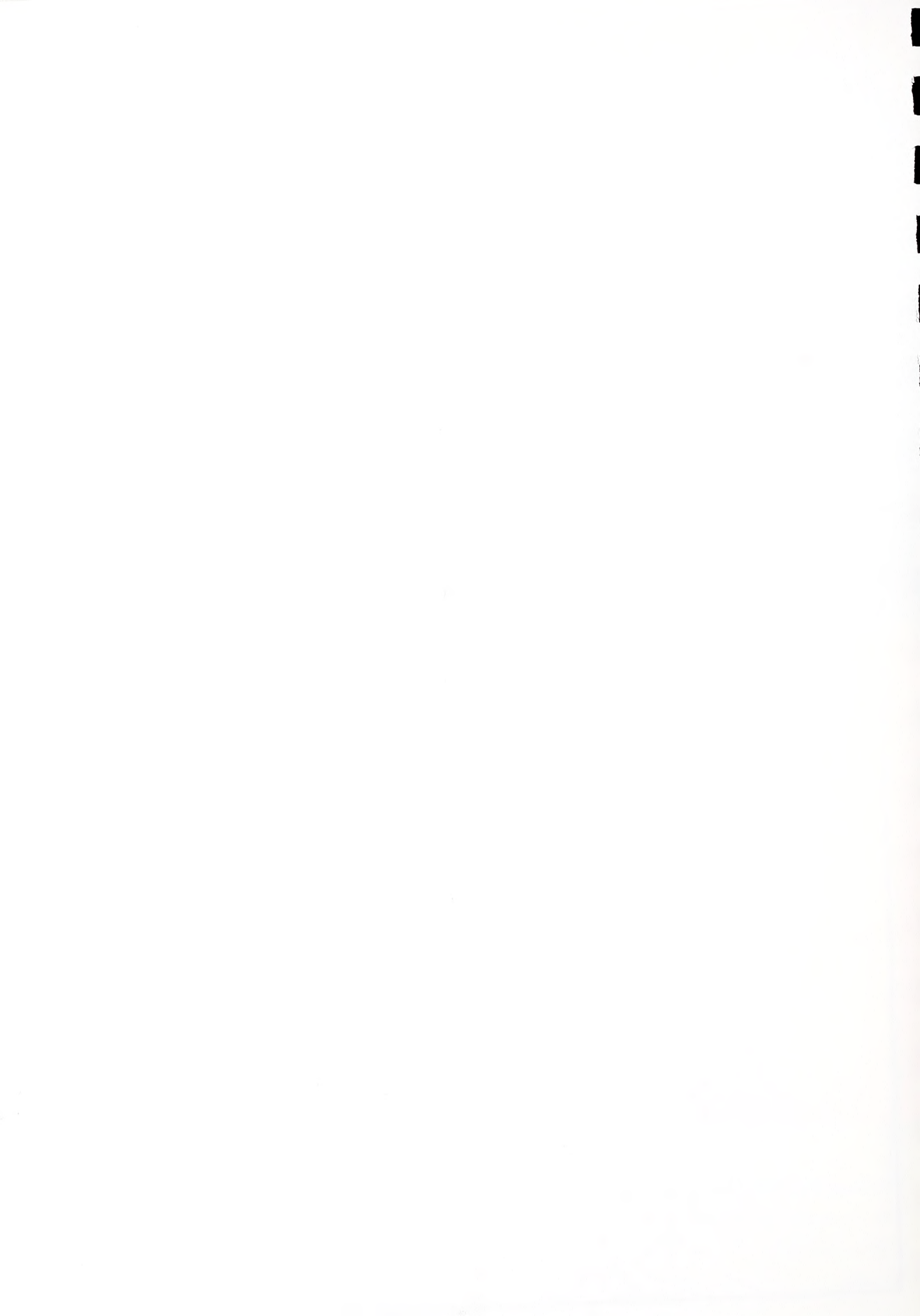


Table 1-2. Summary Comparison of Impacts By Alternative

Environmental Resource	Indicator*	No Action Alternative	Proposed Action	Alternative A - Modified Development Sequence (Agency Preferred)
Air Resources	Particulate Matter (PM ₁₀) (p. 4-4, 4-16, 4-68)	3,778 tpy, starting to decrease in 1997.	675 tpy more than No Action	128 tpy less than No Action, source at Oxhide delayed 7 years.
	Sulfur and Nitrogen Oxides (SO ₂ -NO _x) (p. 4-5, 4-16, 4-70)	3660 tpy, starting to decrease in 1997.	972 tpy SO ₂ - NO _x more than No Action	104 tpy SO ₂ -NO _x less than No Action
	Acid Mist (p. 4-17, 4-72)	Negligible	Negligible	Same as proposed
	Hazardous Air Pollutants (p. 4-6, 4-16, 4-70)	3.3 tpy	3.35 tpy	Same as proposed
	Conformity Analysis Requirement (p. 4-17, 4-72)	Not applicable as already permitted	Full analysis would be needed if selected	Analysis not needed as emissions below de minimus threshold
Geology and Minerals	Slope Stabilities (p. 4-19, 4-20)	Sufficient safety factors	Sufficient safety factors	Same as proposed
	Mineral (Copper) Production (p. 2-5, 2-8, 4-7, 4-21)	55 million lbs/yr 1.0 billion lbs recovered total	160 million lbs/yr 2.8 billion lbs recovered total	Same as proposed
Groundwater	Quantity (p. 4-8, 4-22, 4-77)	No change	Depth to groundwater may increase adjacent to the BL pit. No other significant impacts.	Same as proposed
	Quality (p. 3-30, 4-8, 4-23, 4-77)	Possible on site exceedances of Arizona and EPA standards/guidelines for SO ₂ , TDS, Al, Fe, Mn, Cl, Cd, Cr, pH, U, and radionuclides.	Modeling indicated possible exceedance of aquifer water quality standards (AWQS) for a short distance down-gradient of leach facilities. No other significant impacts.	Same as proposed; no change at Oxhide site for 7 years.
Surface Water	Quantity (p. 4-8, 4-28, 4-77)	No change from current conditions.	Current drainage patterns altered. 18 water sources would be covered by the proposed facilities. No other impacts. Surface water contained on-site.	Same as proposed, no change at Oxhide site for 7 years.
	Quality (p. 4-8, 4-29, 4-77)	No change from current conditions.	Minimal impacts. Surface water contained on-site.	Same as proposed.

Clean Water Act Section 404(b)(1) Permit Alternatives - Waters of the United States

In accordance with 40 CFR 230, several alternatives to the proposed action were evaluated in order to avoid effects to Waters of the United States. Twelve sites were evaluated as possible leach pad site locations. These locations are listed and described in Chapter 2 of the DEIS. In general, the criteria developed by Cyprus Miami for citing the leach pads were: 1) upgradient of existing surface disturbance, 2) away from population centers, 3) environmentally safe and feasible, and 4) operationally and technically feasible. The citing analysis is documented in Evaluation of Leach Pad Citing Alternatives for Cyprus Miami Mining Corporation Leach Facilities Expansion Project (Whitman and Co. 1995a-updated 1996). The proposed sites maximize ore placement per acre of disturbance. In order to meet the spatial requirements for the placement of 30 million tons of ore per year, Cyprus Miami requires three leach pads with adequate surface area. Of the alternatives assessed, there were no sites or feasible combinations of sites that could replace the capacity of the proposed facilities. The exception to this is the former Webster Lake area leach pad alternatives. These were eliminated from consideration at this time because of their legal and potential technical infeasibility associated with the designation of the former Webster Lake site as a WQARF site and lack of a final remediation plan.

One site was evaluated as a possible waste rock disposal site. The Needles area was considered as an alternative to the Barney waste rock site in order to eliminate impacts to drainages and riparian vegetation. The alternative was eliminated as technically infeasible because available volume for waste rock was limited, plans to expand the existing 22 Dump would utilize some of the area, and placing waste rock at the site would preclude removal of growth medium for subsequent reclamation purposes.

Based on the analysis of alternatives, the BLM and Forest Service Preferred Alternative is considered by the COE to be the Least Environmentally Damaging Practicable Alternative for the purposes of Section 404.

1.4 ISSUE TRACKING MATRIX

The following matrix presents page numbers where various issues are addressed in the DEIS.

Issue Tracking Matrix - Page Numbers Where Issues Are Addressed

Issues	Summary	1.0 Purpose and Need	2.0 Alternatives	3.0 Affected Environment	4.0 Environmental Consequences
1. Groundwater Quality	S-6, S-9	1-5, 1-7, 1-10, 1-12	2-8, 2-31, 2-34, 2-44, 3-28, 3-30	3-24, 3-28, 3-30	4-8, 4-23, 4-77, 4-81, 4-83
2. Groundwater Quantity and Flow	S-6, S-9	1-5, 1-7, 1-10, 1-12	2-28, 2-31, 2-34	3-23, 3-25, 3-28	4-22, 4-69, 4-77, 4-83
3. Surface Water Quality	S-6, S-7	1-5, 1-7, 1-10, 1-12	2-18, 2-22, 2-26, 2-31, 2-34, 2-37	3-35, 3-38, 3-40	4-8, 4-29, 4-77, 4-81
4. Surface Water Flows	S-6, S-7	1-6, 1-10, 1-12	2-17, 2-18, 2-20, 2-22, 2-26, 2-29, 2-34, 2-35, 2-42	3-34, 3-37, 3-38, 3-45	4-8, 4-28, 4-31, 4-33, 4-69, 4-77
5. Air Quality	S-4, S-6	1-5, 1-7, 1-10, 1-12	2-34	3-2	4-4, 4-16, 4-68, 4-72
6. Geotechnical Stability	S-6	1-7, 1-12	2-9, 2-11, 2-13, 2-15, 2-20, 2-34	3-21	4-7, 4-21
7. Soil Losses	S-7	1-10, 1-13	2-35	3-45	4-8, 4-36, 4-81
8. Reclamation Potential	S-7	1-10, 1-12	2-5, 2-27, 2-28, 2-29, 2-35, 2-40		4-31
9. Sensitive Plants	S-3, S-7	1-6, 1-7, 1-8, 1-10, 1-13	2-35	3-59, 3-60, 3-61	4-39, 4-40, 4-69, 4-78, 4-81, 4-83
10. Wetlands	S-5	1-5, 1-8, 1-10, 1-13	2-31, 2-36	3-58, 3-59	4-39, 4-70, 4-81, 4-84
11. Wildlife Habitats	S-3, S-7	1-6, 1-7, 1-8, 1-10, 1-13	2-35, 2-38,	3-62	4-9, 4-37, 4-41, 4-78, 4-80, 4-81
12. Sensitive Wildlife	S-7	1-6, 1-10, 1-14	2-31, 2-35	3-66, 3-67, 3-68, 3-70	4-9, 4-43, 4-44, 4-69, 4-78, 4-80, 4-83
13. Cultural Resources	S-7	1-6, 1-8, 1-10, 1-14	2-35	3-69, 3-77	4-9, 4-48, 4-80, 4-82, 4-83
14. Job Preservation	S-1, S-3, S-8	1-4, 1-7, 1-10, 1-14	2-8, 2-35, 2-37	3-90	4-10, 4-53
15. Support of Economy	S-8	1-6, 1-10, 1-14	2-36	3-80, 3-85, 3-87	4-12, 4-54, 4-55, 4-82
16. Land Use Changes	S-5, S-8	1-9, 1-10, 1-14	2-7, 2-15, 2-18, 2-21, 2-22, 2-24, 2-33, 2-36	3-1, 3-90	4-2, 4-13, 4-58, 4-69, 4-78, 4-80, 4-82, 4-83
17. Recreation Changes		1-10, 1-15		3-2	4-1, 4-3
18. Visual Resources	S-8	1-10, 1-15	2-36	3-98	4-14, 4-18, 4-64, 4-69, 4-73, 4-79, 4-82
19. Noise		1-10, 1-15		3-1, 3-12	4-1
20. Transportation		1-10, 1-15	2-18, 2-21, 2-24, 2-26	3-97	4-14, 4-61, 4-82
21. Hazardous Materials	S-8	1-10, 1-15	2-15, 2-36	3-104	4-15, 4-66, 4-82
22. Water Rights	S-7	1-7	2-35	3-41	4-31
23. Waters of the US	S-7	1-4, 1-5	2-35, 2-36, 2-37, 2-38	3-45	4-33



2.0 CHANGES AND ADDITIONS FROM THE DRAFT EIS TO THE FINAL EIS

2.1 CHANGES, ADDITIONS, AND CORRECTIONS

This chapter contains specific modifications and corrections to the Cyprus Miami Leach Facilities Expansion Draft EIS. These modifications and corrections were made in response to comments received during the public comment period.

SUMMARY

- Page S-1 last paragraph, 1st sentence: Delete the comma after “Cyprus Miami” and add a comma after “No Action Alternative.”
- Page S-5 Additional information has been added to Table S-1 and the table is reproduced as Table 1-1 on page 1-4 of this FEIS.
- Page S-6 Table S-2; Numerous revisions were made to Table S-2 (which is the same as Table 2-4) and the table is reproduced as Table 1-2 on page 1-6 in this FEIS.
- Page S-9 The Issue Tracking Matrix has had numerous page number references corrected and is reproduced in Section 2.2 of this FEIS.

CHAPTER 1

- Page 1-5 2nd line: Change line to read “regulations for the discharge of dredged and/or fill material into waters of the United States including adjacent wetlands”.
- Page 1-6 Table 1-1, under Executive Order 12898: In 2nd column add "Executive Order 13007." Add in the third column “Protection of Indian Sacred Sites and their religious practices.”
- Page 1-7 Table 1-1, 8th line from bottom, left column: Add new heading “State Mine Inspector.”
- Table 1-1, 8th line from bottom, center column: “State Reclamation Act” should be “State Mined Land Reclamation Act.”
- Page 1-8 Table 1-1, Last row (Gila County) should be deleted.

CHAPTER 2

- Page 2-5 Section 2.4.1, 6 lines from bottom of page: Add sentence after “...lands owned by Cyprus Miami.” to read “Following leaching, the ore remains on the leach pad and is not handled again.”

- Page 2-8 4th line from top: Add sentence after "...cathode copper.", to read "SX-EW does not produce any kind of tailings and no operation within the Leach Facility Expansion Project would create any tailings."
- Page 2-9 Section 2.4.2.1, 2nd paragraph: Insert a new paragraph after the 2nd sentence to read "A crushing and screening circuit would be constructed near an active mining area to prepare Gila conglomerate materials for use as the cushion layer on which the leach pad liner would be installed. The crushing circuit would be designed to process 1,000 tons per hour and would include a grizzly crusher, a jaw crusher, a cone crusher, screen decks, and conveyors. Water spray bars would be placed at all transfer points to minimize dust generation. The crushing circuit would be powered by a co-located diesel-driven generator set."

The 4th paragraph of this section would then begin "The specific methods of....."
- Page 2-10 Additional information has been added to Figure 2-4, and the figure is reproduced later in this chapter.
- Page 2-11 Section 2.4.2.2, 1st bullet: Insert "or suitable soil" after "tailings".

3rd bullet: Place a period after "leach pad" on 2nd line and delete remainder of the sentence. Add new sentence to read "The spacing between the solution collection piping network, as well as the hydraulic conductivities of the pad and drainage layer, was designed using the 'EPA Mound Model' so that the hydraulic head above the geomembrane liner would be less than two feet. This modeling is described in Volume 4, Appendix B-5 of the APP Application."
- Page 2-14 Additional information has been added to Figure 2-6, and the figure is reproduced later in this chapter.
- Page 2-15 Section 2.4.2.8: Change "1993" to "1996".
- Page 2-18 Section 2.4.4, 4th line: Change "R.41E." to "R.14E." in two locations on that line and in one location on the 5th line.
- Page 2-21 Section 2.4.4.4: Add a new 2nd sentence to read, "The utilities are accessed by a road (Forest Road 608) that parallels the pipelines in Little Pinto Canyon."
- Page 2-26 Section 2.4.6.1: Revise 5th sentence by deleting "designated" and replacing "at the various Cyprus Miami facilities" with "for use by Cyprus Miami during reclamation activities."
- Page 2-31 Section 2.5, paragraph in middle of page beginning "Rationale for...", 2nd sentence: Change "improved solution control" to "new solution recovery".

Paragraph beginning "Solution control..."; 1st sentence: Change "control" to "recovery". 2nd sentence: Change "control" to "recovery". 3rd sentence: Change "control" to "recovery".

- Page 2-33 Additional information has been added to Table 2-3 and the table is reprinted as Table 1-1 on page 1-4 of this FEIS.
- Page 2-34 Table 2-4, Please see Table 1-2 in this FEIS to replace Table 2-4 in the DEIS.
- Page 2-39 Section 2.7, 3rd line: Change “consideration” to “analysis”.
- Page 2-44 Section 2.7.10: Revise 2nd sentence to read "Cyprus Miami designed the leach facilities to provide for adequate leaching rate capacity for placement of 30 million tons per year through the planning cycle."

CHAPTER 3

- Page 3-4 First paragraph: Add new sentence on end of paragraph to read "Figure 3-1a shows a windrose from Miami, Arizona." The figure is presented in Section 2.2 of this chapter.
- Page 3-9 Section 3.1.1.4, in paragraph beginning “The vast majority...”: Add new second sentence reading “Fugitive emissions are measured at the property boundary.”
- After 7th bullet, add new sentence reading: "Note: no tailings are created or handled by this project."
- Page 3-24 Section 3.3.1.1.2, 2nd paragraph, Last sentence: Change “corporate” to “mining company”.
- Page 3-26 Section Study Area Groundwater Occurrence and Flow, 1st paragraph, next to last line: “ground water” should be one word “groundwater”.
- Page 3-28 Section 3.3.1.3.1, 1st bullet, 4th sentence: Replace sentence with the following; “Based on studies by Golder Associates Inc. (1995e), the depth to groundwater in monitoring wells at this site ranged from 7.5 to 28.5 feet below ground surface.”
- Page 3-29 Top bullet, last line: Revise line to read “influenced by the number, size, and interconnection of joints and fractures.”
- 2nd bullet, 2nd paragraph, 2nd line: Revise line to read ...“groundwater just down-gradient of the proposed GMC facility ranged from 2.4...”
- Page 3-33 Figure 3-7: The source for the figure should be changed to “Arizona Department of Water Resources”.
- Page 3-35 Regional Surface Water Use, last line: Remove “back slash (\) symbol” at end of line.
- Page 3-37 Section 3.3.2.2.1, 4th paragraph, 4th line from bottom: Change line to read “...natural inflow to Webster Lake was diverted around the lake, or...”

- Page 3-38 Section 3.3.2.2.2, 2nd paragraph, next to last line: Insert “current” in front of “project area...”.
- Page 3-43 Table 3-11, Source: Change “Cyprus Miami Mining Corporation” to “Arizona Department of Water Resources.”
- Page 3-46 Figure 3-10: Change the acreage of wetlands on the Oxhide Leach Facility from “0.06” to “0.059”.
- Page 3-65 Section 3.5.2.2.6, 2nd paragraph, 3rd line: Change “Callipela” to “Callipepla.”
- Page 3-104 Section 3.10, 2nd sentence: Revise sentence by deleting “mine wastes” and replacing with “non-hazardous mine wastes, which, for this expansion, means non-acid generating overburden (Gila conglomerate).”

CHAPTER 4

- Page 4-1 Section 4.0, 2nd paragraph: Add following sentence to end of paragraph; “However, it must be noted, these activities have been, and could continue to occur under the No Action Alternative, but at reduced rates and for a reduced time period.”
- Page 4-3 Section 4.1.1, 5th bullet; insert "Class I" between "on" and "Air".
- Page 4-4 Table 4-2. Comparison of Maximum Annual PM₁₀ Emissions has been revised and is reprinted in section 2.2 of this chapter.
- Page 4-5 Table 4-3. Comparison of Maximum Annual NO_x and SO₂ Emissions has been revised and is reprinted in section 2.2 of this chapter.
- Page 4-16 Section 4.2.1.1.1, 1st paragraph, next to last sentence: Replace “waste rock hauling” with “long hauls” and replace “the Barney waste rock facility” with “new and existing leach dumps.”
- Same paragraph, last sentence: Change "4,439" to "4,452", and change "are" to "is." Add new last sentence to read "The crushing plant for Gila conglomerate materials for the leach pad foundation would contribute approximately 13 tpy."
- 2nd paragraph, 1st line: Change "662" to "about 675."
- Section 4.2.1.1.2, 1st line: Change "851" to "about 908."
- Section 4.2.1.1.3, 1st line: Change "59" to "about 64."
- Page 4-17 Paragraph beginning "VOC emissions...", 1st sentence: Change "one exception" to "two exceptions", and add to the end of the sentence the phrase "and there would be emissions from the generator set for the crushing and screening operation, estimated at 5.82 tpy."

- Page 4-18 Section 4.2.1.3, 2nd paragraph, 2nd line: Change "662" to "about 675."
- Page 4-23 Section 4.2.3.2.1, Item 1), 1st bullet, 10th line: Change line to read "...considered significant, as discussed in item 3) of this section. An underdrain system beneath..."
- 2nd bullet: Replace paragraph with the following revision; "Groundwater quality will be monitored just down-gradient of each leach facility. The Aquifer Protection Permit (APP) application, not yet granted by the ADEQ, proposes one well down-gradient of the BL facility, four wells down-gradient of the GMC facility, and two wells down-gradient of the Oxhide facility. The wells will be monitored quarterly."
- Page 4-24 Section 4.2.3.2.1, item 3), 3rd sentence: Replace "the EPA" with "has been accepted for APP applications by the ADEQ."
- Add two sentences before last sentence to read; "The model was developed to provide conservative estimates of the impacts of potential seepage. The model is considered extremely conservative and was developed to evaluate impacts from theoretical defects in the liner system"
- Last sentence in paragraph: Add "Some of" to the beginning of the sentence.
- 3rd bullet: Add sentence after existing sentence to read; "As described in Section 2.4.2.2, the spacing within the solution collection piping network, as well as the hydraulic conductivities of the pad and drainage layer, were designed so that the hydraulic head above the geomembrane liner would be less than two feet."
- Add a new 4th bullet to read; "It is assumed there is no lateral dispersion of leakage through the materials below the synthetic liner."
- Page 4-25 Item 4): Revise last sentence to read "For the reasons described in Items 1) through 3) above, it is unlikely that the proposed leach facilities would contribute to any further degradation of groundwater quality that currently exists in the area, as described in Section 3.3.1.3.2."
- Section 4.2.3.2.2, 2nd bullet: Add to end of last sentence, "as shown on Table 4-5a. Waste Rock Tonnages." The table is presented in the following section 2.2 of this chapter.
- Page 4-33 Section 4.2.4.3, paragraph beginning "Also lost...": Add new last sentence to read "To the extent that additional surface water (water not currently captured by existing sumps and ponds) is contained and reused in the mine, Cyprus Miami will acquire a new water appropriation under State law."

- Section 4.2.4.4. Open Water, 1st bullet: Change “lost” to “impacted”.
- Second bullet on page: Change “lost” to “impacted”.
- Last bullet on page: Change “develop” to “be planted”.
- Page 4-35 5 lines from bottom of page: Remove 2nd period at end of sentence.
- Page 4-36 2nd line, add to end of sentence: "for a total of 1,057 acres, of which 272 acres would be reclaimed and revegetated and 785 acres would revegetate naturally."
- Page 4-40 Section 4.2.6.1.6, Last sentence: Delete sentence. (Cyprus Miami has agreed that succulents and cacti from the proposed disturbance areas would be available for opportunistic salvage prior to disturbance, and therefore, such salvage would be classified as part of the proposed action. Both Federal agencies as well as the Arizona Department of Agriculture have management regulations that Cyprus Miami will have to comply with, while the Corps of Engineers has no regulations concerning salvage of succulents and cacti.)
- Page 4-42 Section 4.2.6.2.1, 1st paragraph, second sentence: Change “1 percent” to “3 percent”, and add the following to the end of the sentence; “in Globe, Miami, Superior, and other areas.” The last sentence should be revised to read “Therefore, the new disturbance area of the Proposed Action would represent about 0.2 percent of the Management Unit.
- Page 4-55 Table 4-13: Change title of table to read “Total Estimated Direct Economic Effects for 17-year Proposed Action and 10-year No Action Alternatives.”
- Page 4-58 Section 4.2.9: Delete the last paragraph of the section and replace with the following; “On a quantifiable basis, mining is the historic and highest and best use of the project sites.”
- Page 4-64 Section 4.2.10, 3rd paragraph, 1st sentence: Change period at end of sentence to a comma, and add “however, they do not meet assigned VQOs.” Replace 2nd sentence with the following two sentences; “Even though some areas are Maximum Modification, land form alteration may dominate the landscape when viewed as background. These changes must be those of natural occurrences.” Add new last sentence to paragraph to read, “Reduction of contrasts should be accomplished within five years after cessation of activities on the site.”
- Page 4-70 2nd and 3rd lines should be continuous.
- In paragraph beginning "The annual emissions...", 4th line: Change "3,636" to "3,650". On 5th line: Change "228" to "241." On 6th line: Change "5.1" to "6.6."

In paragraph beginning "The net maximum...", 1st line: Change "140" to "128."

Section 4.3.1.1.2, 1st line: Change "152" to "96." Last sentence: change period to a comma, and add phrase to read "except that the action alternatives would yield an additional 4.84 tpy of SO₂ from emissions from the generator set at the crushing and screening operation."

Section 4.3.1.1.3, 4th line: Change "13" to "8."

Section 4.3.1.1.4, 2nd line: Change "1.4" to "3.8" and change "3.35" to "9.17."

Page 4-71 Figure 4-2, 4th line from top, inside the figure: Change "3,637" to "3,650."

Page 4-73 Section 4.3.1.3, 2nd line: Change "140" to "128." On 3rd line, change "152" to "about 96" and change "13" to "8."

Page 4-75 3rd paragraph, 1st sentence: Change period at end of sentence to a comma and add a new phrase to read "and would be within the Tonto National Forest Limits of Acceptable Change for visibility."

Page 4-78 1st paragraph, last line: Delete the words "and the dace population at that location."

Page 4-79 Section 4.4.1: Add a new first sentence to the paragraph to read; "An issue of concern is post-closure water quality in leachate collection ponds and the pits."

Page 4-81 Section 4.5.2, 4th bullet: change "16" to "18."

Page 4-82 Section 4.5.7: revise end of sentence starting after "key observation points" to read "but would not meet assigned VQOs until after reclamation."

Page 4-83 Section 4.6, 2nd paragraph, 3rd sentence: Revise sentence to read "Groundwater quality would not be affected off-site, but may be degraded for a short distance down-gradient of the leach facilities; this is described in detail in Section 4.2.3.2." Add new sentence following revised sentence to read "Estimated effects are results of conservative modeling of hypothetical defects in the liner system." See also the responses to BLM Letter 32.

CHAPTER 5

Page 5-3 Section 5.2, 3rd line: The Internet address should have "az" immediately in front of "www"

CHAPTER 6

Page 6-5 Cyprus Miami Mining Corporation. The titles for Msrs. Iles, Davis, and Bilson should be moved up the page by one line.

CHAPTER 8

Page 8-1 4th line from bottom: Change “gm/l” is to “g/l”

3rd line from bottom: Remove “gr/l” and its definition.

2.2 REPRINTED TABLES AND FIGURES

This section presents tables and figures which were added or which had substantive changes made in response to comments on the DEIS.

TABLES

Table 4-2, Comparison of Maximum Annual PM₁₀ Emissions.

Table 4-3, Comparison of Maximum Annual NO_x and SO₂ Emissions.

Table 4-5a, Waste Tonnage Distribution by Rock or Material Type.

FIGURES

Figure 2-4, Leach Pad Foundation and Underdrain.

Figure 2-6, Leach Solution Collection Reservoir and Liner Detail.

Figure 3-1a, Windrose - Miami, Arizona.

Figure 3-12a, Little Pinto Impoundment with Riparian Vegetation.

Table 4-2. Comparison of Maximum Annual PM₁₀ Emissions (Tons per Year)

Activity	No Action (Year 2000)	Proposed Action (Year 2005)	Alternative A (Agency Preferred) (Year 2007)	Alternative A Emissions from Expansion Footprints* (Year 2007)
Blast Hole Drilling	2.40	2.28	2.22	0.00
Blasting	71.01	67.45	65.62	0.00
Loading and Dumping	27.16	25.80	24.86	3.08
Haul Truck Travel	3299.95	3914.06	3188.22	191.57
Light Truck Travel	79.96	79.96	76.65	4.80
Wind Erosion	63.24	60.08	58.39	14.47
Dozer Activity	13.11	12.45	7.47	1.62
Diesel Fuel Combustion	220.88	277.74	213.47	12.82
Crushing & Screening	0.00	7.64	7.64	7.64
Total	3777.71	4452.64	3649.72	241.18
Net (Compared to No Action)	NA	+674.93	-127.99	NA

Source: Evaluation for Conformity Analysis.

* Expansion footprints are the new facility sites that would disturb federal and private lands.

Table 4-3. Comparison of Maximum Annual NO_x and SO₂ Emissions (Tons per Year)

Pollutant	Activity	No Action (Year 2000)	Proposed Action (Year 2005)	Alternative A (Agency Preferred) (Year 2007)	Alternative A Emissions from Expansion Footprints* (Year 2007)
NO _x	Blasting	92.75	88.11	47.06	0.00
	Diesel Fuel Combustio n	3324.30	4236.76	3273.85	250.07
Total		3417.05	4324.87	3320.91	250.07
Net (Compared to No Action)		NA	+907.82	-96.14	NA
SO ₂	Blasting	10.91	10.37	5.55	0.0
	Diesel Fuel Combustio n	231.93	296.47	228.91	18.30
Total		242.84	306.84	234.46	18.30
Net (Compared to No Action)		NA	+64.00	-8.38	NA

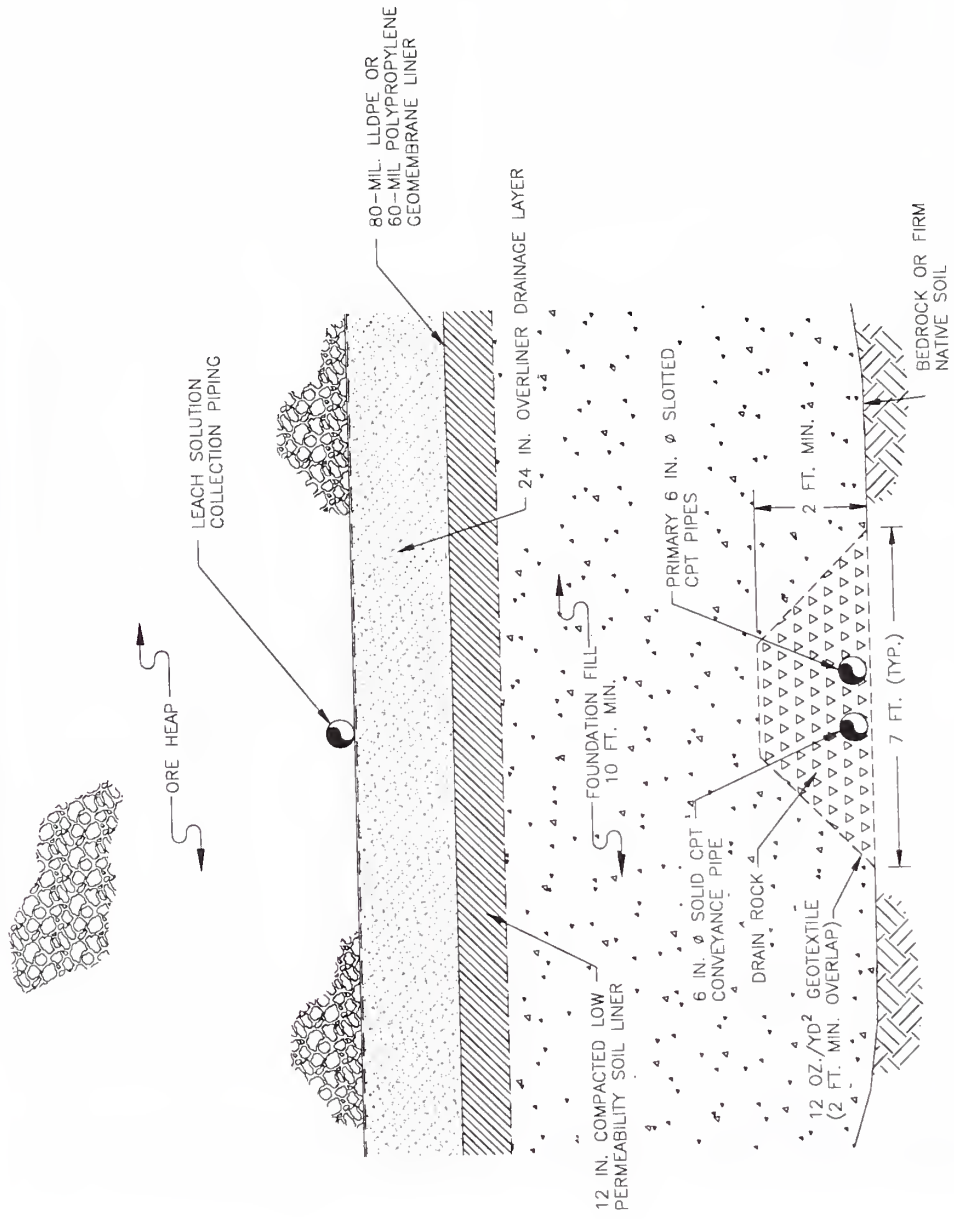
Source: Evaluation for Conformity Analysis.

* Expansion Footprints are the new facility sites that would disturb federal and private lands.

Table 4-5a. Waste Tonnage Distribution by Rock or Material Type (thousand tons)

Year	Alluvium/ Colluvium	Dacite	Gila Conglomerate	Granite	Shist	Total
1995	5240	3374	41805	5668	10055	66142
1996	13014	9787	30210	11007	8222	72240
1997	2945	269	49603	4780	5957	63554
1998	4773	2665	43597	2061	8037	61133
1999	3662	1410	41254	3178	7496	57000
2000	1343	2247	44067	5748	12580	65985
2001	4839	3116	38605	5234	9285	61079
2002	5239	3373	41790	5666	10050	66118
2003	5597	1770	45522	2245	7546	62680
2004	5597	1770	45522	2245	7546	62680
2005	5597	1770	45522	2245	7546	62680
2006	5597	1770	45522	2245	7546	62680
2007	5597	1770	45522	2245	7546	62680
2008	3649	2350	29116	3947	7003	46065
2009	486	1052	8133	871	5195	15737
2010	245	0	0	2395	5944	8584
2011	0	0	0	1998	6586	8584
Total	73420	38493	595790	63778	134140	905621
Percent of Total	8.1	4.3	65.8	7.0	14.8	100.0

Source: Golder Associates Inc. 1995f

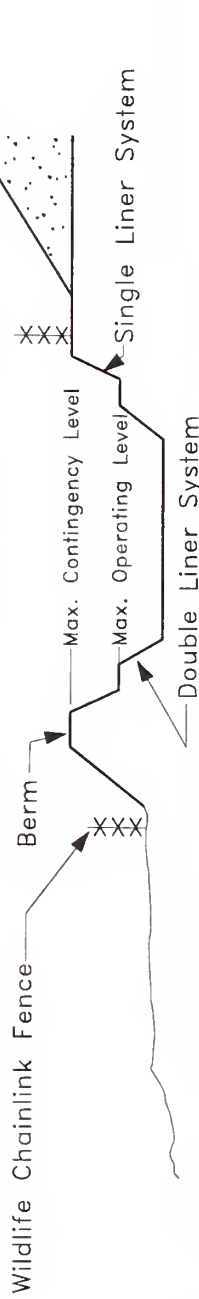


Cyprus Miami Mining Corporation
Leach Facility Expansion EIS

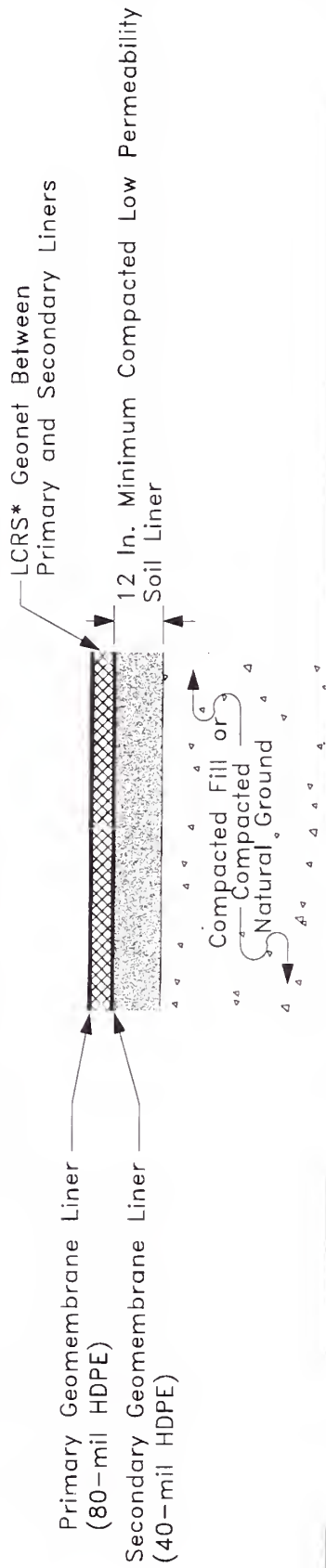
Figure 2-4

LEACH PAD FOUNDATION AND UNDERDRAIN

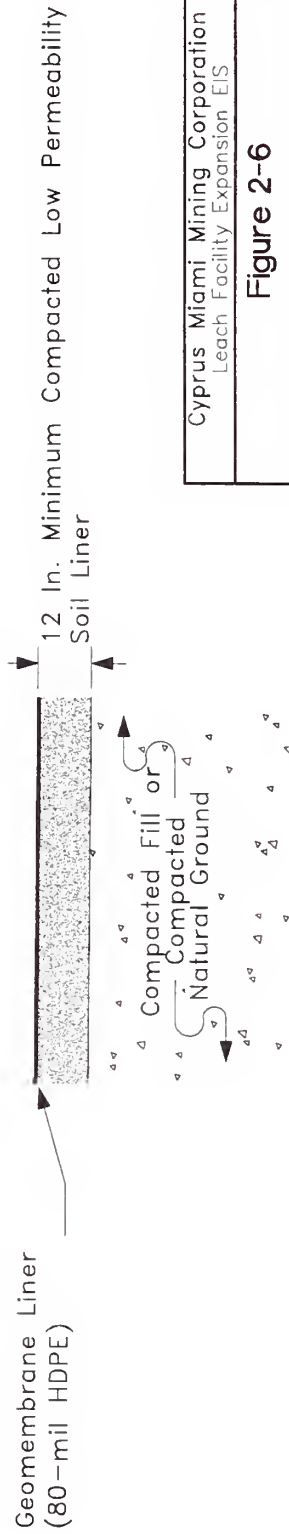
LEACH SOLUTION COLLECTION RESERVOIR



MAXIMUM OPERATING LEVEL LINER DETAIL (double-lined)



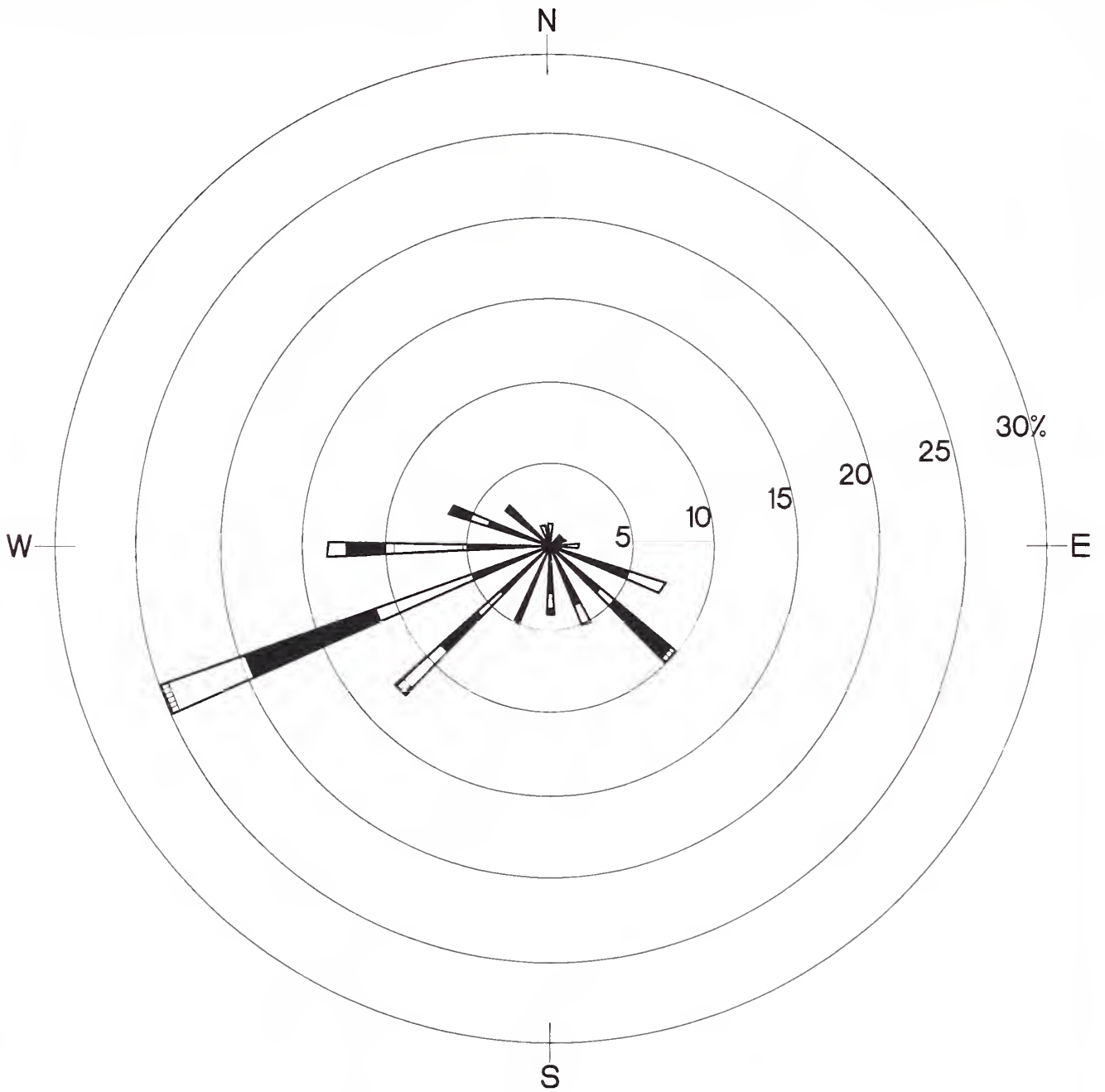
CONTINGENCY LEVEL LINER DETAIL (single-lined)



Cyprus Miami Mining Corporation
Leach Facility Expansion EIS

Figure 2-6

LEACH SOLUTION COLLECTION
RESERVOIR AND LINER DETAIL



WIND SPEED CLASSES
(KNOTS)

Cyprus Miami Mining Corporation
Leach Facility Expansion EIS

Figure 3-1a

WINDROSE
Miami, Arizona
Period: 1994-95



WIND SPEED (CM/SEC)
 (Scale)

Figure 10
 W. D. ...
 ...
 ...



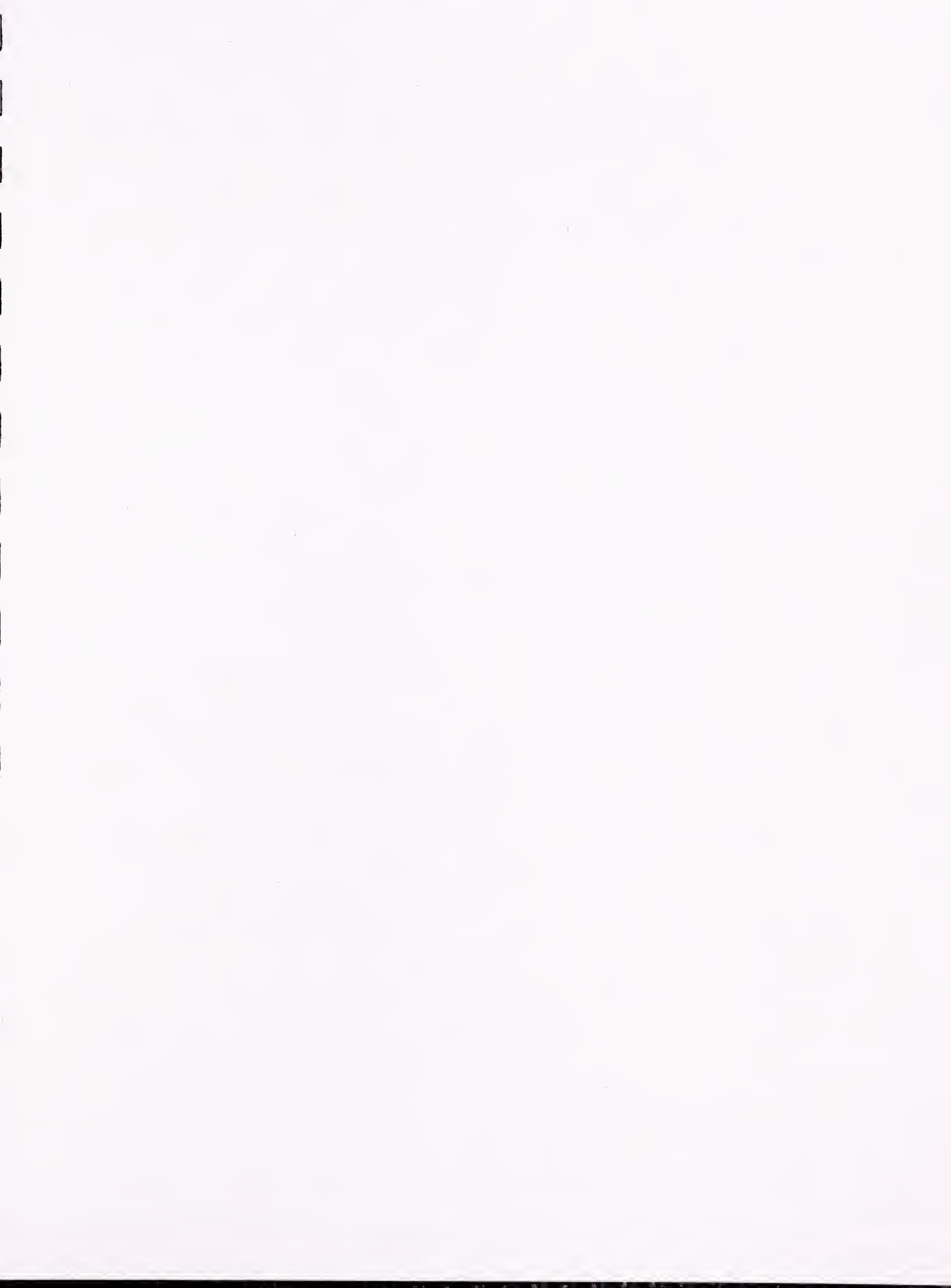
PF= Populus fremontii association
 TR = Tamarix ramosissima association

Cyprus Miami Mining Corporation
 Leach Facility Expansion EIS
Figure 3-12a
RIPARIAN HABITAT UPGRADEMENT
OF PROPOSED LITTLE
PINTO IMPOUNDMENT

Source: SWCA, Inc., Tucson

Rev. 9/01/97

GREYSTONE



3.0 PUBLIC PARTICIPATION AND REVIEW PROCESS

3.1 THE REVIEW PROCESS

The public review process started with the Notice of Intent to prepare an EIS by the federal lead agencies (BLM Phoenix Field Office and Tonto National Forest) published in the *Federal Register* and local newspapers on October 28, 1994. The Notice of Intent solicited comments on the proposed project and notified the public how comments could be made. The lead federal agencies distributed approximately 890 scoping letters to individuals and organizations on the agencies' mailing lists. Two scoping meetings were also held in order to inform the public and to receive comments on the proposed project. The first meeting was held in Miami, Arizona on November 16, 1994, and the second meeting was held in Mesa, Arizona on November 17, 1994. Approximately 140 people attended the two meetings. Comments received during the public scoping period (October 28 to December 17, 1994) were then considered during the preparation of the Draft EIS. A total of 48 written letters or comment forms were submitted during the public scoping period.

The Cyprus Miami Leach Facilities Expansion Draft EIS was distributed for public comment on April 9, 1997, and its availability was announced in the *Federal Register* on April 14, 1997. The BLM and Forest Service received written comments and held two public hearings to receive comments during the comment period which ended June 10, 1997. The first public hearing was held in Miami, Arizona on May 14, 1997, and the second in Mesa, Arizona on May 15, 1997. Approximately 75 people attended the two hearings. Ten people spoke at the hearing in Miami and seven people spoke at the hearing in Mesa. A total of 48 comment letters was received by both agencies.

As part of the public participation plan, letters soliciting comment were sent to the following list of Native American communities in April 1997. In August 1997, tribes were again invited to address their concerns before finishing the Final EIS. Three tribes responded with comments, indicated in bold below:

Fort McDowell Indian Community
Hopi Tribe
Salt River Pima-Maricopa Indian Community
San Carlos Apache Tribe
Tonto Apache Tribe

White Mountain Apache Tribe
Yavapai-Apache Nation
Yavapai-Prescott Tribe
Zuni Pueblo

Additionally, the tribes were invited to participate in the ethnohistoric study conducted as part of the cultural resources consultation with the State Historic Preservation Officer. Six of the tribes responded. Tribal elders and cultural specialists were interviewed and tribal representatives attended field visits to the project site.

Comments received during the public comment period were addressed in preparation of this Final EIS. Neither written comments nor verbal comments received during public meetings required major changes or revisions in the analysis or conclusions presented in the Draft EIS.

Therefore, rather than reprint the entire DEIS, this abbreviated version has been produced consistent with 40 CFR 1500.4 (m). This document must be read in conjunction with the Draft EIS that was distributed to the public April 9, 1997. Minor revisions to the Draft EIS are presented in Chapter 2, Section 3.3, and Chapter 4 of this document.

3.2 AGENCIES, ORGANIZATIONS, AND INDIVIDUALS THAT RECEIVED THE DEIS

Table 3-1 presents the list of Agencies, Organizations, and Individuals that received the DEIS in early April, 1997.

Table 3-1. Agencies, Organizations, and Individuals Who Received the DEIS

ORGANIZATIONS and INDIVIDUALS

D.K. Martin & Assoc. - Real Estate & Utilities	Dixon, Robert M.
Federal Aviation Administration - Executive Director	Early, George
Minerals Exploration Coalition	Enders, William A.
People for the West - President, Globe-Miami Chapter	Erskine, T.E. E.
Wood Permits West, Inc.	Euler, Robert C.
Abel, Alan J.	Eyde, Dan T.
Armour, James M.	Feldman, Bill
Arnold, Ken	Felix, Daniel M.
Bengson, S. A.	Fernley, Landi
Bittner, E. Ross	Fletcher, Gary J.
Blaine, Marjorie	Flood, Tim
Bodnar, Bob	Gambell, Neil A.
Boles, Patrick H.	Garfield, Mike
Brown, George	Garrison, James W.
Brunson-Hadley, Dr. Judy	Gregory, Michael
Burke, Rebecca J.	Hassell, M. Jean
Burkhardt, Glynn G.	Hauge, Erik R.
Burton, James E.	Heuslein, Amy L.
Campbell, Norma J.	Hobday, Ross L.
Cantou, Pierre M.	Hogan, David
Chew, Matthew K.	Horvath, Bob
Coker, Betty L.	Jacks, Jack B.
Cole, Jane B.	John, Edward C.
Corathers, Lisa	Johnson, David L.
Corn, Russell M.	Jones, Douglas E.
Davis, Marie	Keating, Linus T.
de Kok, David A.	Kendall, William T.
Dechambre, David J.	Kirwan, Edward A.
Deen, Linda	LaFronz, Nicholas J.
	Lancaster, Donald E.
	Laux, Daniel P.

Leather, Nancy L.
Lorenz, Ronald A.
Lundy, James H. Jr.
Malmquist, Mike J.
Marion, Roger D.
Martin, Douglas K.
Mawson, Robert J.
May, Charles R.
McCullen, Sandee and John
Medhi, P.K. Rana
Meyer, David R.
Nelson, Doug C.
Nyenhuis, James H.
Oppedahl, Mark
Phillips, Ken A.
Pinkava, Donald J.
Porter, Kenneth
Powers, Richard L.
Prendergast, Ray A.
Rabb, David D.
Radvak, Steven J.
Ramaley, Karilee S.
Ramey, Melodee A.
Reid, C.P. Patrick
Rice, Clarence E.
Rickard, Forrest R.
Rodke, Col. R.B.
Rogge, A.E.
Roscoe, John G.
Saad, Joni
Salas, Cruz
Sater, Greg X.
Scacewater, L.B.
Schmidt, Fred C.
Scott, Joan
Seidman, Mike
Sell, James D.
Shea, James J.
Shipley, Chuck
Shroyer, Don
Siegel, Michael S.
Smith, Ted Sr.
Stanwood, Mike
Stephenson, John H.
Steuter, Don
Sullivan, James H.

Thomas, Rachel
Thompson, Leslie E.
Valenzuela, Jim C.
Vaughan, Postelle R.
Walker, David L.
Welch, John
Wendt, Gene I.
Werner, Frances W.
Whicker, John E.
White, Jack L.
Whitman, Kathy G.
Wiese, Charles W.
Woods, Lori Jones
Worden, Marshall A.
Worman, Terry
Young, John M.

AGENCIES

Director
DOI Bureau of Land Management

Office of Public Affairs
DOI

Office of Environmental Project Coord.
DOI

Bureau of Reclamation
Denver, CO

Directorate of Environmental Quality
Civil Engineer HO USFS/CEVP

Director of Environmental Coordination
Dept. of Agriculture US Forest Service

Division of Environmental Compliance
DOI-National Park Service

Office of Federal Activities
Environmental Protection Agency

Chief, Division of Environmental
Contaminants
Fish and Wildlife Service

**ELECTED OFFICIALS WITH
JURISDICTION IN CYPRUS MIAMI
PROJECT AREA**

Natural Resources Library
DOI

Federal
Congressional Dist. 6 - Rep. J.D. Hayworth
Senator John McCain
Senator John Kyl

Head Acquisitions & Serial Branch
USDA - National Agricultural Library

State
Gov. Fife Symington
Rep. Debra Brimhall
Rep. Franklin L. (Jake) Flake
Senator Jack Brown

Office of NEPA Oversight
Department of Energy

Office of Deputy A/S of the USAF

Environmental Review Coordinator
EPA Region IX

Local (County/City)
Mayors:
City of Globe
Town of Miami

Chief, Environmental Policy & Program
Div.
Minerals Management Service

Town of Superior

Environmental Affairs Program
U.S. Geological Survey

County Board of Supervisors - Gila County

U.S. Geological Survey
Denver, CO

Director, Directorate of Planning
Southwestern Div-US Army Corps of
Engineers

Engineering Review and Permit Unit
Arizona Dept of Environmental Quality

USFS Nogales Ranger District - Minerals
Staff

3.3 PUBLIC COMMENTS AND AGENCY RESPONSES

This Section of Chapter 3 includes copies of all public comments received in response to the Cyprus Miami Leach Facility Expansion Draft EIS. The public comments are reproduced and the agency's responses are provided adjacent to the comment. Forty eight comment letters were received by the agencies and are identified with either a BLM or a Forest Service number. In accordance with provisions of the Privacy Act, only organizations and agencies are identified; individual's names have been redacted. In addition, ten persons spoke at the Public Hearing in Globe, seven people spoke at the Hearing in Mesa, and their comments are also reproduced from the hearing transcripts.

Thank you for your comments.

May 6, 1997

Sheila McFarlin, Project Manager
Bureau of Land Management
Arizona State Office
222 Central Avenue
Phoenix, Arizona 85004-2203

Dear Sheila:

On May 14 and 15, 1997, Cyprus Miami Mining Corporation has public hearings scheduled to discuss the Draft Environmental Impact Statement for their Leach Expansion Project in Gila County.

I will be unable to attend either public meeting, but encourage you to approve the project expeditiously for the following reasons:

1. The project is designed to meet or exceed best available demonstrated control technology (BADCT) as is required by the State of Arizona. The project has many environmental attributes, including a composite liner system underlying the leach pads, double lined collection reservoirs and a leak collection recovery system.
2. The project will be subject to stringent ground and surface water monitoring and a comprehensive closure and reclamation plan that will be guaranteed by a performance bond.
3. The project generates a huge economic impact of \$2.9 billion dollars, some of which goes to supporting local, state and federal governments.
4. The project extends life of mine, sustains employment and preserves the local cultural heritage.
5. The project is designed to minimize energy consumption by optimizing shorter haulage routes.
6. Both prehistoric and historic sites will be mitigated.
7. Abandoned mine workings will be mitigated.

RECEIVED
BUREAU OF
LAND MANAGEMENT
May 7 2 21 PM '97
ARIZONA
STATE OFFICE
PHOENIX, ARIZONA

RESPONSE TO BLM LETTER 1 AND FS 1

Sheila McFarlin, Project Manager
Page 2
May 6, 1997

8. The project provides for mitigation to impacts to jurisdictional waters of the United States, including re-creation of open water resources and the establishment of a mesquite bosque.
9. The Little Pinto impoundment will enhance the quality of the riparian area in Little Pinto Canyon.
10. Material suitable for reclamation will be segregated and dedicated to a single overburden site.

Sincerely,

RKW/kam

RECEIVED
BUREAU OF
LAND MANAGEMENT

MAY 7 2 21 PM '97

ARIZONA
STATE OFFICE
PHOENIX, ARIZONA



BLM - 2

Arizona State Mine Inspector

DOUGLASK MARTIN

1700 W. Washington Suite 400
Phoenix, Arizona 85007-2805
(602) 542-5971
Fax: (602) 542-5335

RESPONSE TO BLM LETTER 2

2a. The errors have been corrected; see page 2-1 of the FEIS.

May 7, 1997

Sheila McFarlin, Co-Project Leader
Bureau of Land Management
222 North Central Ave.
Phoenix, AZ 85004

Dear Ms. McFarlin:

The State Mine Inspector has reviewed the Draft Environmental Impact Statement for the Cyprus Miami Mining Corporation Leach Facilities Expansion, BLM EIS number BLM/AZ/PL/003. This office is supportive of the proposed action or of the Agency Preferred Alternative, as either course of action will continue to provide employment and produce copper under safe conditions.

We did note two errors in Table 1-1:

2a

On page 2 of 3: "- State Reclamation Act" - Mine Reclamation Plan. The authorizing agency for this is not the Arizona Department of Environmental Quality. It is the Arizona Mine Inspector, who is one of seven elected state officials. The proper name of the law is "The State Mined Land Reclamation Act"

On page 3 of 3: lists Gila County as the authorizing agency for County Ordinances, with Zoning Ordinances and Building permits listed as requiring their approval. Arizona Revised Statutes Title 11 (Counties) 11-830 states: "Nothing contained in any ordinance authorized by this chapter shall: (2). Prevent, restrict or otherwise regulate the use or occupation of land or improvements for railroad, mining, metallurgical, grazing or general agricultural purposes, if the tract concerned is five or more contiguous commercial acres." Therefore, the last line of this tabulation should be deleted, as Gila County does not have any authority concerning building or land use.

Sincerely,

Bill Hawes

Assistant Mine Inspector

rec'd
5/14/97
BLM - 3



5-12-97

Ms. S. M^S Farlin
BLM - AZ State Office (AZ-917)
222 N. Central
Phoenix, AZ 85004

RESPONSE TO BLM LETTER 3

Thank you for your comments.

RE: DEIS - Cyprus Miami Leach Facility Expansion Project (Apr. 1997)

Dear Ms. M^S Farlin:

Following my review of the results of your analysis, I conclude:

A. The No Action alternative is UNACCEPTABLE. This alternative has too great an impact on mineral resources, and there are far too few positive implications to other natural resources to justify the negative implications for socio-economic aspects of the environment.

B. I can live with the other two alternatives.

I like the way you have organized this report but must admit to considerable confusion as I read it; lots of re-reading and head-scratching to figure out what was actually being said.

Respectfully

Community Resolutions in Support of

CYPRUS MIAMI MINING CORPORATION'S LEACH EXPANSION PROJECT

Presented to the Federal Hearing Officer at the Draft Environmental Impact Statement Hearings

May 14 & 15, 1997

Resolutions Passed By:

- + Central Heights Fire District
- + City of Globe
- + Cobre Valley Community Hospital
- + Gila County Board of Supervisors
- + Globe Downtown Association
- + Globe Rotary Club
- + Greater Globe-Miami Chamber of Commerce
- + Miami Area Unified School District No. 40
- + Miami Rotary Club
- + People For The West - Globe-Miami Chapter
- + Southern Gila County Economic Development Corporation
- + Town of Miami

Letter of Support:

- + Eastern Arizona College - Gila Pueblo Campus

BLM - 4

Southern Gila County

Economic Development Corporation

101 North Broad Street, Post Office Box 1351, Globe, Arizona 85502 • Telephone 520 425 2228 • Facsimile 520 425 6154

RESPONSE TO BLM LETTER 4

Thank you for your comments

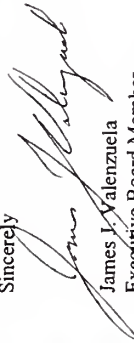
Shela Mc Farlin
Project Manager
Bureau of Land Management
Arizona State Office
222 Central Avenue
Phoenix, Az 85004-2203

I am taking this opportunity to express my support for the BLM to approve the expansion permit for Cyprus Miami Mining Corporation. The mining industry encompasses a very competitive market which has a tremendous impact on the economic base of local , state and federal governments. Extending the life of our local mines will allow for a strong employment base and strengthens our position of not becoming dependent on foreign countries for raw minerals.

With today's proven control technology Cyprus is able to address key environmental issues to ensure the safeguard of our environment. The project will implement a water monitoring system, comprehensive closure and reclamation plan guaranteed by a performance bond.

In conclusion, this project is located in the heart of the copper reserves in this state and we should assist in support of this major industry to strengthen the industrial future of this country.

Sincerely



James J. Valenzuela
Executive Board Member
Southern Gila County Economic Development Corporation

Thank you for your comments.

Mr. Paul Stewart, Project Manager
Tonto National Forest
2324 E. Mc Dowell
Phoenix, AZ. 85006

Dear Sirs,

The Southern Gila County Economic Development Corp. supports the Cyprus Miami Mining Corp. Leach Facility expansion for the following reasons.

The project is designed to meet or exceed today's demonstrated control technology as required by the state of Arizona. It has also been noted that Cyprus Miami Mining Corporation will produce a performance Bond to insure stringent ground & Surface water monitoring.

This project will generate an overall economic impact of \$2.9 Million, supporting local companies, contractors, as well as school systems, local, State and Federal Governments. This project will also sustain Cyprus's employment base at the present level and extends the life of the mine by 20 - 25 years.

It is the opinion of the Southern Gila Economic Development Corporation that this Cobre Valley region has been the home to mining since 1873, and therefore should continue to provide employment through mining as long as the reserves and the technology exists to sustain mining in this part of Arizona.

If this was a new mine being proposed next to a Sahuaro National Monument or other national treasures, the Southern Gila County Economic Development Corporation would probably oppose this mine expansion. But it is not and we are not. Mines are just as much a part of Gila County as is its cattle. So lets help to sustain our economy while we help to diversify. We ask that you grant this project and lets get to work.

Sincerely,



Bob Moffett
Executive Director

BLM - 6



CITY OF GLOBE

RESPONSE TO BLM LETTER 6

Thank you for your comments.

May 15, 1997

To Whom It May Concern:

The City of Globe is an environmentally conscious governmental body because of the extensive mining activities in our area. Cyprus Miami Mining Corporation's proposed leach expansion project has been well engineered and is environmentally safe. The precautions and foresight that Cyprus has demonstrated in their planning are an example of a standard that can be achieved by the mining industry.

Since establishing operations in our community, Cyprus has always shown a progressive attitude toward safety for their employees, the environment, and the public. The relations and good will that have evolved in our community from that attitude are unprecedented.

As in all communities in Arizona, water is of the utmost concern. The built-in precautions for protection of the water have been discussed and are satisfactory to the City of Globe's "water team."

The last subject I would like to address is the economical impact this expansion will have on our community. The estimated expenditure of \$2.9 billion represents an enormous impact in any community and even larger to a rural city.

We urge you to approve this application in an expedient manner so that Cyprus may continue their operations in an orderly fashion without additional, unwarranted expense.

Sincerely,

Ross Bitner
Vice-Mayor

RESOLUTION NO. 1241

A RESOLUTION OF THE MAYOR AND COUNCIL OF THE CITY OF GLOBE, GILA COUNTY, ARIZONA, ANNOUNCING SUPPORT FOR THE CYPRUS MIAMI MINING CORPORATION LEACH EXPANSION PROJECT AND REQUESTING SUPPORT OF SAID PROJECT BY THE APPROPRIATE AGENCIES.

WHEREAS, a primary purpose of the City of Globe is to promote the economic, social, cultural, and environmental well-being on the citizens of the Greater Globe-Miami Community, and

WHEREAS, copper mining is the primary component of the local economy, tax base and history, and

WHEREAS, Cyprus Miami Mining Corporation is the community's leading employer, tax payer, contributor to charitable activities, and

WHEREAS, Cyprus Miami Mining Corporation is an environmental leader in the community as is evidenced by its many reclamation, remediation and restoration projects; and

WHEREAS, Cyprus Miami Mining Corporation has been involved in the National Environmental Policy Act (NEPA) Environmental Impact Statement process since April of 1994, with the Forest Service and the Bureau of Land Management acting as joint lead agencies; and

WHEREAS, Cyprus Miami Mining Corporation proposes to construct new leaching facilities and an overburden deposition site utilizing the best available demonstrated control technology as is prescribed by the State of Arizona; and

WHEREAS, the proposed facilities incorporate many positive environmental attributes, will employ state-of-the-art environmental technologies, will extend the life of the mining operation, will provide an estimated 2.9 billion dollars of direct and indirect economic benefits, and

WHEREAS, the proposed facilities must be partially located on federal lands because of

the lack of private property ownership in Gila County, Arizona, where a mere three (3%) percent of the land base is in private ownership; and

WHEREAS, the failure of the joint lead agencies to expeditiously approve this project will have a detrimental effect on the local economy, tax base, cultural heritage and environment; and

NOW, THEREFORE, BE IT RESOLVED that the City of Globe supports the Cyprus Miami Mining corporation leach expansion project, urges city officials to support said project and requests the joint lead agencies to immediately approve said project.

PASSED AND ADOPTED by the Mayor and Council of the City of Globe this ____ day of April, 1997.

ATTEST:


City Clerk


Mayor

APPROVED AS TO FORM:


City Attorney

Central Heights Fire District

P.O. Box 777
Claypool, Arizona 85532

Phone (520) 425-0815
Fax (520) 425-5392

RESPONSE TO BLM LETTER 7

Thank you for your comments.

WHEREAS, a primary purpose of the Central Heights Fire District is to promote the economical, social, cultural and environmental well being on the citizens of the Greater Globe - Miami community, and

WHEREAS, copper mining is the primary component of the local economy, tax base and cultural heritage, and

WHEREAS, Cyprus Miami Mining Corporation is an environmental leader in the community as is evidence by its many reclamation, remediation and restoration projects, and

WHEREAS, Cyprus Miami Mining Corporation been involved in the National Environmental Policy Act (NEPA) Environmental Impact Statement process since April of 1994, with the Forest Service and Bureau of Land Management acting as joint lead agencies, and

WHEREAS, Cyprus Miami Mining Corporation proposes to construct new leaching facilities and overburden deposition site utilizing the best available demonstration control technology as is prescribed by the State of Arizona, and

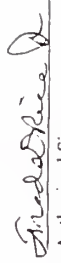
WHEREAS, the proposed facilities incorporate many positive environmental attributes, will employ state-of-the-art environmental technologies, will extend the life of the mining operation, will provide nearly 2.9 billion dollars of the direct and indirect economic benefits, and

WHEREAS, the proposed facilities must be partially located on federal lands because of the lack of private property ownership in Gila County, Arizona, where a mere three percent of the land base is in private ownership, and

WHEREAS, the failure of the joint lead agencies to expeditiously approve this project will have a deleterious effect on the local economy, tax base, cultural heritage and environmental; and

NOW, THEREFORE, BE IT RESOLVED that Central Heights Fire District supports the Cyprus Miami Mining Corporation leach expansion project, urges its employees and members to support said project and urges the joint lead agencies to immediately approve said project

Dated and adopted this 13th day of MAY, 1997


Authorized Signature
Fire Board Chair

A RESOLUTION OF THE MAYOR AND COUNCIL OF THE CITY OF GLOBE, GILA COUNTY, ARIZONA, ANNOUNCING SUPPORT FOR THE CYPRUS MIAMI MINING CORPORATION LEACH EXPANSION PROJECT AND REQUESTING SUPPORT OF SAID PROJECT BY THE APPROPRIATE AGENCIES.

Thank you for your comments.

WHEREAS, a primary purpose of the City of Globe is to promote the economic, social, cultural, and environmental well-being on the citizens of the Greater Globe-Miami Community; and

WHEREAS, copper mining is the primary component of the local economy, tax base and history, and

WHEREAS, Cyprus Miami Mining Corporation is the community's leading employer, tax payer, contributor to charitable activities, and

WHEREAS, Cyprus Miami Mining Corporation is an environmental leader in the community as is evidenced by its many reclamation, remediation and restoration projects; and

WHEREAS, Cyprus Miami Mining Corporation has been involved in the National Environmental Policy Act (NEPA) Environmental Impact Statement process since April of 1994, with the Forest Service and the Bureau of Land Management acting as joint lead agencies; and

WHEREAS, Cyprus Miami Mining Corporation proposes to construct new leaching facilities and an overburden deposition site utilizing the best available demonstrated control technology as is prescribed by the State of Arizona; and

WHEREAS, the proposed facilities incorporate many positive environmental attributes, will employ state-of-the-art environmental technologies, will extend the life of the mining operation, will provide an estimated 2.9 billion dollars of direct and indirect economic benefits, and

WHEREAS, the proposed facilities must be partially located on federal lands because of

the lack of private property ownership in Gila County, Arizona, where a mere three (3%) percent of the land base is in private ownership; and

WHEREAS, the failure of the joint lead agencies to expeditiously approve this project will have a detrimental effect on the local economy, tax base, cultural heritage and environment; and

NOW, THEREFORE, BE IT RESOLVED that the City of Globe supports the Cyprus Miami Mining corporation leach expansion project, urges city officials to support said project and requests the joint lead agencies to immediately approve said project.

PASSED AND ADOPTED by the Mayor and Council of the City of Globe this 16TH day

^{MAY}
of April, 1997.

ATTEST:


City Clerk


Mayor

APPROVED AS TO FORM:


City Attorney



RESPONSE TO BLM LETTER 9

Thank you for your comments.

WHEREAS a primary purpose of Cobre Valley Community Hospital is to promote the health of the citizens of the Greater Globe-Miami community,

WHEREAS, copper mining is the primary component of the local economy, tax base and cultural heritage, and

WHEREAS, Cyprus Miami Mining Corporation is the community's leading employer, tax payer contributor to charitable activities, and

WHEREAS, Cyprus Miami Mining Corporation is an environmental leader in the community as evidenced by its many reclamation, remediation and restoration projects, and

WHEREAS, Cyprus Miami Mining Corporation has been involved in the National Environmental Policy Act (NEPA) Environmental Impact Statement process since April of 1994, with the Forest Service and Bureau of Land Management acting as joint lead agencies, and

WHEREAS, Cyprus Miami Mining Corporation proposes to construct new leaching facilities and an overburden deposition site utilizing the best available demonstrated control technology as is prescribed by the State of Arizona, and

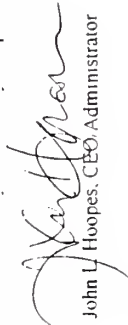
WHEREAS, the proposed facilities incorporate many positive environmental attributes, will employ state-of-the-art environmental technologies, will extend the life of the mining operation, will employ nearly three hundred million dollars of direct and indirect economic benefits, and

WHEREAS, the proposed facilities must be partially located on federal lands because of the lack of private property ownership in Gila County, Arizona, where a mere three percent of the and base is in private ownership, and

WHEREAS, the failure of the joint lead agencies to expeditiously approve this project will have a deleterious effect on the local economy, tax base, cultural heritage and environment, and

NOW, THEREFORE, BE IT RESOLVED THAT COBRE VALLEY COMMUNITY HOSPITAL supports the Cyprus Miami Mining Corporation leach expansion project, urges its employees and medical staff members to support said project and urges the joint lead agencies to immediately approve said project.

Dated and adopted this 22nd day of April, 1997 by the Cobre Valley Community Hospital Board of Directors at its regular meeting.



John J. Hoopes, CEO, Administrator

RESOLUTION NO. 97-4-4

A RESOLUTION OF THE BOARD OF SUPERVISORS OF GILA COUNTY, ARIZONA, SUPPORTING CYPRUS MIAMI MINING CORPORATION'S LEACH EXPANSION PROJECT

Thank you for your comments.

WHEREAS, a primary purpose of the Gila County Board of Supervisors is to promote the economic, social, cultural and environmental well being of the citizens of Gila County, which includes the Greater Globe-Miami community; and

WHEREAS, Cyprus Miami Mining Corporation is operating in a recognized mining district where copper mining is the primary component of the local economy, tax base and cultural heritage; and

WHEREAS, Cyprus Miami Mining Corporation is a leading community employer, tax payer, and contributor to charitable activities; and

WHEREAS, Cyprus Miami Mining Corporation proposes to construct new leaching facilities and an overburden deposition site utilizing the best available demonstrated control technology as is prescribed by the State of Arizona; and

WHEREAS, the proposed facility incorporates many positive environmental attributes, will employ state-of-the-art environmental technologies, will extend the life of the mining operation, will provide nearly two point nine billion dollars of direct and indirect economic benefits; and

WHEREAS, the proposed facilities must be partially located on federal lands because of the lack of private property ownership in Gila County, Arizona, where a mere three percent of the land base is in private ownership; and

WHEREAS, Cyprus Miami Mining Corporation has been involved in the National Environmental Policy Act (NEPA) Environmental Impact Statement process since April of 1994, with the Forest Service and Bureau of Land Management acting as joint lead agencies; and the failure of these agencies to expeditiously approve this project will have a deleterious effect on the local economy, tax base, cultural heritage and environment.

NOW, THEREFORE, BE IT RESOLVED that the Gila County Board of Supervisors fully supports the Cyprus Miami Mining Corporation's leach expansion project, urges the citizens of Gila County to support said project and urges the joint lead agencies to approve said project without further delay

PASSED AND ADOPTED this 29th day of April, 1997.

GILA COUNTY BOARD OF SUPERVISORS

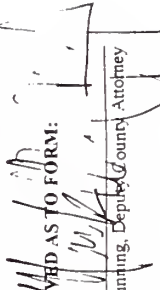
ATTEST:


Cruz Salas, Chairman


Ronald A. Christensen, Vice Chairman


Edward G. Guerrero, Member


Steven L. Besich, Clerk of the Board

APPROVED AS TO FORM:

Mark Gunning, Deputy County Attorney

BLM - 11

GLOBE DOWNTOWN ASSOCIATION

101 North Broad Street
P O Box 662
Globe, Arizona 85502-0662
Phone (520) 425-9340

RESPONSE TO BLM LETTER 11

Thank you for your comments.

WHEREAS, a primary purpose of the Globe Downtown Association is to promote the economic, social, cultural and environmental well being of the citizens of the Greater Globe-Miami community; and

WHEREAS, copper mining is the primary component of the local economy, tax base and cultural heritage; and

WHEREAS, Cyprus Miami Mining Corporation is the community's leading employer, tax payer, contributor to charitable activities; and

WHEREAS, Cyprus Miami Mining Corporation is an environmental leader in the community as is evidenced by its many reclamation, remediation and restoration projects; and

WHEREAS, Cyprus Miami Mining Corporation has been involved in the National Environmental Policy Act (NEPA) Environmental Impact Statement process since April of 1994, with the Forest Service and Bureau of Land Management acting as joint lead agencies; and

WHEREAS, Cyprus Miami Mining Corporation proposes to construct new leaching facilities and an overburden deposition site utilizing the best available demonstrated control technology as is prescribed by the State of Arizona; and


WHEREAS, the proposed facilities incorporate many positive environmental attributes, will employ state-of-the-art environmental technologies, will extend the life of the mining operation, will provide nearly 2.9 billion dollars of direct and indirect economic benefits, and

WHEREAS, the proposed facilities must be partially located on federal lands because of the lack of private property ownership in Gila County, Arizona, where a mere three percent of the land base is in private ownership; and

WHEREAS, the failure of the joint lead agencies to expeditiously approve this project will have a deleterious effect on the local economy, tax base, cultural heritage and environment; and

NOW, THEREFORE, BE IT RESOLVED that the Globe Downtown Association supports the Cyprus Miami Mining corporation leach expansion project, urges its employee and members to support said project and urges the joint lead agencies to immediately approve said project.

Dated and adopted this 30 day of April, 1997


Eva Eldridge, President
Globe Downtown Association



Globe Rotary Club

POST OFFICE BOX 147
GLOBE, ARIZONA 85501

GLOBE ELKS CLUB
12:10 P. M. WEDNESDAYS

RESPONSE TO BLM LETTER 12

Thank you for your comments.

RESOLUTION

WHEREAS, a primary purpose of the Globe Rotary Club is to promote the economic, social, cultural and environmental well being on the citizens of the Greater Globe-Miami community; and

WHEREAS, copper mining is the primary component of the local economy, tax base and cultural heritage; and

WHEREAS, Cyprus Miami Mining Corporation is the community's leading employer, tax payer, contributor to charitable activities; and

WHEREAS, Cyprus Miami Mining Corporation is an environmental leader in the community as is evidenced by its many reclamation, remediation and restoration projects; and

WHEREAS, Cyprus Miami Mining Corporation has been involved in the National Environmental Policy Act (NEPA) Environmental Impact Statement process since April of 1994, with the Forest Service and Bureau of Land Management acting as joint lead agencies; and

WHEREAS, Cyprus Miami Mining Corporation proposes to construct new leaching facilities and an overburden deposition site utilizing the best available demonstrated control technology as is prescribed by the State of Arizona; and

WHEREAS, the proposed facilities incorporate many positive environmental attributes, will employ state-of-the art environmental technologies, will extend the life of the mining operation, will provide 2.9 billion dollars of direct and indirect economic benefits, and

WHEREAS, the proposed facilities must be partially located on federal lands because of the lack of private property ownership in Gila County, Arizona, where a mere three percent of the land base is in private ownership, and

WHEREAS, the failure of the joint lead agencies to expeditiously approve this project will have a deleterious effect on the local economy, tax base, cultural heritage and environment; and

NOW, THEREFORE, BE IT RESOLVED that the Globe Rotary Club supports the Cyprus Miami Mining Corporation leach expansion project, urges its (employees or members) to support said project and urges the joint lead agencies to immediately approve said project.

Dated and adopted this 16th day of April, 1997

"SERVICE ABOVE SELF - HE PROFITS MOST WHO SERVES BEST"

RESOLUTION

No. 15

RESPONSE TO BLM LETTER 13

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE GREATER GLOBE-MIAMI CHAMBER OF COMMERCE IN SUPPORT TO PROMOTE THE ECONOMIC, SOCIAL, CULTURAL AND ENVIRONMENTAL WELL BEING ON THE CITIZENS OF THE GREATER GLOBE-MIAMI COMMUNITY.

Thank you for your comments.

WHEREAS, a primary purpose of the Greater Globe-Miami Chamber of Commerce is to promote the economic, social, cultural and environmental well being on the citizens of the Greater Globe-Miami community; and

WHEREAS, copper mining is the primary component of the local economy, tax base and cultural heritage; and

WHEREAS, Cyprus Miami Mining Corporation is the community's leading employer, tax payer, contributor to charitable activities; and

WHEREAS, Cyprus Miami Mining Corporation is an environmental leader in the community as is evidenced by its many reclamation, remediation and restoration projects; and

WHEREAS, Cyprus Miami Mining Corporation been involved in the National Environmental Policy Act (NEPA) Environmental Impact Statement process since April of 1994, with the Forest Service and Bureau of Land Management acting as joint lead agencies; and

WHEREAS, Cyprus Miami Mining Corporation proposes to construct new leaching facilities and an overburden deposition site utilizing the best available demonstrated control technology as is prescribed by the State of Arizona; and

WHEREAS, the proposed facilities incorporate many positive environmental attributes, will employ state-of-the-art environmental technologies, will extend the life of the mining operation, will provide nearly 2.9 billion dollars of direct and indirect economic benefits; and

WHEREAS, the proposed facilities must be partially located on federal lands because of the lack of private property ownership in Gila County, Arizona, where a mere three percent of the land base is in private ownership; and

WHEREAS, the failure of the joint lead agencies to expeditiously approve this project will have a deleterious effect on the local economy, tax base, cultural heritage and environment; and

THEREFORE BE IT RESOLVED, that the Greater Globe-Miami Chamber of Commerce supports the Cyprus Miami Mining Corporation leach expansion project, urges its members to support said project and urges the joint lead agencies to immediately approve said project.

PASSED AND RESOLVED that the Greater Globe-Miami Chamber of Commerce does this the 8th day of April, 1997 declare this Resolution duly passed and adopted.

GREATER GLOBE-MIAMI CHAMBER OF COMMERCE

BY: Jeri Byrne
Jeri Byrne, President

ATTEST:

Myrna Lenox
Myrna Lenox, Secretary/Treasurer

MIAMI AREA UNIFIED SCHOOL DISTRICT NO. 40

RESPONSE TO BLM LETTER 14

WHEREAS, a primary purpose of the Miami Area Unified School District No. 40 is to promote the economic, social, cultural and environmental well being on the citizens of the Greater Globe-Miami community; and

WHEREAS, copper mining is the primary component of the local economy, tax base and cultural heritage; and

WHEREAS, Cyprus Miami Mining Corporation is the community's leading employer, tax payer, contributor to charitable activities; and

WHEREAS, Cyprus Miami Mining Corporation is an environmental leader in the community as is evidenced by its many reclamation, remediation and restoration projects; and

WHEREAS, Cyprus Miami Mining Corporation been involved in the National Environmental Policy Act (NEPA) Environmental Impact Statement process since April of 1994m with the Forest Service and Bureau of Land Management acting as joint lead agencies; and

WHEREAS, Cyprus -Miami Mining Corporation proposes to construct new leaching facilities and an overburden deposition site utilizing the best available demonstrated control technology as is prescribed by the State of Arizona.; and

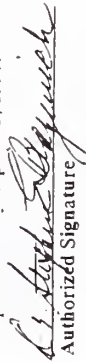
WHEREAS, the proposed facilities incorporate many positive environmental attributes, will employ state-of-the-art environmental technologies, will extend the life of the mining operation, will provide 2.9 billion dollars of direct and indirect economic benefits; and

WHEREAS, the proposed facilities must be partially located on federal lands because of the lack of private property ownership in Gila County, Arizona, where a mere three percent of the land base is in private ownership; and

WHEREAS, the failure of the joint lead agencies to expeditiously approve this project will have a deleterious effect on the local economy, tax base, cultural heritage and environment; and

NOW, THEREFORE, BE IT RESOLVED that Miami Area Unified School District NO. 40 supports the Cyprus Corporation leach expansion project, urges its employees to support said project and urges the joint lead agencies to immediately approve said project.

Adopted this day April 23, 1997.


Authorized Signature

Thank you for your comments.

BLM - 15

RESOLUTION

No. 15

RESPONSE TO BLM LETTER 15

Thank you for your comments.

A RESOLUTION OF THE MIAMI ROTARY CLUB #1268 IN SUPPORT TO PROMOTE THE ECONOMIC, SOCIAL, CULTURAL AND ENVIRONMENTAL WELL BEING ON THE CITIZENS OF THE GREATER GLOBE-MIAMI COMMUNITY.

WHEREAS, a primary purpose of the Miami Rotary Club #1268 is to promote the economic, social, cultural and environmental well being on the citizens of the Greater Globe-Miami community; and

WHEREAS, copper mining is the primary component of the local economy, tax base and cultural heritage; and

WHEREAS, Cyprus Miami Mining Corporation is the community's leading employer, tax payer, contributor to charitable activities; and

WHEREAS, Cyprus Miami Mining Corporation is an environmental leader in the community as is evidenced by its many reclamation, remediation and restoration projects; and

WHEREAS, Cyprus Miami Mining Corporation been involved in the National Environmental Policy Act (NEPA) Environmental Impact Statement process since April of 1994, with the Forest Service and Bureau of Land Management acting as joint lead agencies; and

WHEREAS, Cyprus Miami Mining Corporation proposes to construct new leaching facilities and an overburden disposal site utilizing the best available demonstrated control technology as is prescribed by the State of Arizona; and

WHEREAS, the proposed facilities incorporate many positive environmental attributes, will employ state-of-the-art environmental technologies, will extend the life of the mining operation, will provide nearly 2.9 billion dollars of direct and indirect economic benefits; and

WHEREAS, the proposed facilities must be partially located on federal lands because of the lack of private property ownership in Gila County, Arizona, where a mere three percent of the land base is in private ownership; and

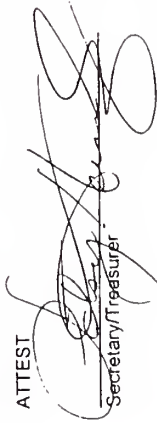
WHEREAS, the failure of the joint lead agencies to expeditiously approve this project will have a deleterious effect on the local economy, tax base, cultural heritage and environment; and

THEREFORE BE IT RESOLVED, that the Miami Rotary Club #1268 supports the Cyprus Miami Mining Corporation leach expansion project, urges its members to support said project and urges the joint lead agencies to immediately approve said project.

PASSED AND RESOLVED that the Miami Rotary Club #1268 does this the 17th day of April, 1997 declare this Resolution duly passed and adopted.

MIAMI ROTARY CLUB #1268

BY  President-Elect

ATTEST

Secretary/Treasurer

People for the West!
Globe-Miami Chapter
PO Box 1802
Claypool, AZ 85532

Jim Clark, President
Tige Rice, Vice President

RESPONSE TO BLM LETTER 16

Thank you for your comments.

WHEREAS, a primary purpose of the (*People for the West!*) is to promote the economic, social, cultural and environmental well being on the citizens of the Greater Globe-Miami community; and

WHEREAS, copper mining is the primary component of the local economy, tax base and cultural heritage; and

WHEREAS, Cyprus Miami Mining Corporation is the community's leading employer, tax payer, contributor to charitable activities; and

WHEREAS, Cyprus Miami Mining Corporation is an environmental leader in the community as is evidenced by its many reclamation, remediation and restoration projects; and

WHEREAS, Cyprus Miami Mining Corporation been involved in the National Environmental Policy Act (NEPA) Environmental Impact Statement process since April of 1994, with the Forest Service and Bureau of Land Management acting as joint lead agencies; and

WHEREAS, Cyprus Miami Mining Corporation proposes to construct new leaching facilities and an overburden deposition site utilizing the best available demonstrated control technology as is prescribed by the State of Arizona; and

WHEREAS, the proposed facilities incorporate many positive environmental attributes, will employ state-of-the-art environmental technologies, will extend the life of the mining operation, will provide nearly 2.9 billion dollars of direct and indirect economic benefits, and

WHEREAS, the proposed facilities must be partially located on federal lands because of the lack of private property ownership in Gila County, Arizona, where a mere three percent of the land base is in private ownership; and

WHEREAS, the failure of the joint lead agencies to expeditiously approve this project will have a deleterious effect on the local economy, tax base, cultural heritage and environment; and

NOW, THEREFORE, BE IT RESOLVED that (*People for the West!*) supports the Cyprus Miami Mining Corporation leach expansion project, urges its (employees or members) to support said project and urges the joint lead agencies to immediately approve said project.

Dated and adopted this 24th day of April, 1997.


James W. Clark, President

BLM - 17

Southern Gila County

Economic Development Corporation

101 North Broad Street, Post Office Box 1351, Globe, Arizona 85502 • Telephone 520 425 2228 • Facsimile 520 425 6154

RESPONSE TO BLM LETTER 17

Thank you for your comments.

RESOLUTION

WHEREAS, a primary purpose of the Southern Gila County Economic Development Corporation is to promote the economic, social, cultural and environmental well being on the citizens of the Greater Globe-Miami community; and

WHEREAS, copper mining is the primary component of the local economy, tax base and cultural heritage; and

WHEREAS, Cyprus Miami Mining Corporation is the community's leading employer, tax payer, contributor to charitable activities; and

WHEREAS, Cyprus Miami Mining Corporation is an environmental leader in the community as is evidenced by its many reclamation, remediation and restoration projects; and

WHEREAS, Cyprus Miami Mining Corporation has been involved in the National Environmental Policy Act (NEPA) Environmental Impact Statement process since April of 1994, with the Forest Service and Bureau of Land Management acting as joint lead agencies; and

WHEREAS, Cyprus Miami Mining Corporation proposes to construct new leaching facilities and an overburden deposition site utilizing the best available demonstrated control technology as is prescribed by the State of Arizona; and

WHEREAS, the proposed facilities incorporate many positive environmental attributes, will employ state-of-the-art environmental technologies, will extend the life of the mining operation, will provide 2.9 billion dollars of direct and indirect economic benefits, and

WHEREAS, the proposed facilities must be partially located on federal lands because of the lack of private property ownership in Gila County, Arizona, where a mere three percent of the land base is in private ownership; and

WHEREAS, the failure of the joint lead agencies to expeditiously approve this project will have a deleterious effect on the local economy, tax base, cultural heritage and environment; and

NOW, THEREFORE, BE IT RESOLVED that the Southern Gila County Economic Development Corporation supports the Cyprus Miami Mining Corporation leach expansion project, urges its (employees or members) to support said project and urges the joint lead agencies to immediately approve said project.

Dated and adopted this 16th day of April, 1997.


President

TOWN HALL - 500 SULLIVAN STREET, MIAMI, ARIZONA 85589
 (520) 473-4403
 (520) 473-3003 FAX NUMBER
 (520) 473-2643 TDD

RESOLUTION NO. 863

A RESOLUTION IN SUPPORT OF
 CYPRUS MIAMI MINING CORPORATION

Thank you for your comments.

WHEREAS, a primary purpose of the Town of Miami is to promote the economic, social, cultural and environmental well being of the citizens of the Greater Miami-Globe community; and

WHEREAS, copper mining is the primary component of the local economy, tax base and cultural heritage; and

WHEREAS, Cyprus Miami Mining Corporation is the community's leading employer, tax payer, contributor to charitable activities; and

WHEREAS, Cyprus Miami Mining Corporation is an environmental leader in the community as is evidenced by its many reclamation, remediation and restoration projects; and

WHEREAS, Cyprus Miami Mining Corporation has been involved in the National Environmental Policy Act (NEPA) Environmental Impact Statement process since April of 1994, with the Forest Service and Bureau of Land Management acting as joint lead agencies; and

WHEREAS, Cyprus Miami Mining Corporation proposes to construct new leaching facilities and an overburden deposition site utilizing the best available demonstrated control technology as is prescribed by the State of Arizona; and

WHEREAS, the proposed facilities incorporate many positive environmental attributes, will employ state-of-the art environmental technologies, will extend the life of the mining operation, will provide nearly 2.9 billion dollars of direct and indirect economic benefits, and

WHEREAS, the proposed facilities must be partially located on federal lands because of the lack of private property ownership in Gila County, Arizona, where a mere three percent of the land base is in private ownership; and

WHEREAS, the failure of the joint lead agencies to expeditiously approve this project will have a deleterious effect on the local economy, tax base, cultural heritage and environment; and

NOW, THEREFORE, BE IT RESOLVED that The Town of Miami supports the Cyprus Miami Mining Corporation leach expansion project, urges its citizens to support said project and urges the joint lead agencies to immediately approve said project.

Dated and adopted this 12th day of May, 1997.


 Joe Sanchez, Mayor

RESPONSE TO BLM LETTER 19

Thank you for your comments.

May 2, 1997

Jay Spehar
Senior Land Man
CYPRUS Miami Mining
PO Box 4444
Claypool, AZ 85532

Dear Mr. Spehar:

I wanted to drop you this personal note to speak on behalf of the Cyprus Miami Mining Leaching Dump Expansion Plan. The establishment of the expansion plan will have a very positive effect on the economic development of the community, and I would like to go on record as supporting the expansion plan because of its benefits to the community.

Cyprus has met the prescribed EIS requirements and this letter is in support of the EIS public hearing.

The Graham County Community College District Governing Board's Gila County Advisory Committee has not planned to meet until September, and would not normally consider making recommendations to the District concerning economic development, although, I have heard the members of the Advisory Committee speak positively for economic development of the communities we serve.

I hope that this letter of support will be of help to Cyprus in acquiring the permission for the expansion plan.

Sincerely,



Donald B. Allen
Executive Dean



15 May, 1997

Rec'd 5/16/97

Thank you for your comments.

MRS SHELA MCFARLIN
BUREAU OF LAND MANAGEMENT
ARIZONA STATE OFFICE, AZ-917
222 NORTH CENTRAL AVENUE
PHOENIX, AZ 85004

Dear Ms. McFarlin,

I attended the public hearing on the DEIS for the Cyprus Miami Mining Corporation Leach Facility Expansion Project.

I wish to go on record as being in favor of this project inasmuch as it has no material impact on any land being used by the public. As was stated at a prior hearing on the Carlota Project, and again at this hearing, the Globe-Miami area is mining country. At least there is no threat to an existing National Monument with this proposal.

Further, Cyprus Miami has demonstrated a commitment to the well being of this community by its tailings reclamation project, its smelter upgrades and its very active participation in the aquifer contamination recovery in which it played no active part in polluting.

The Globe-Miami area is very economically stable and healthy due largely to the industrial base represented by the two existing, and hopefully, three future copper mines. While efforts to diversify the economy have been fairly successful, it is a well known fact that service industries are not as financially rewarding to their employees. This expansion promises to extend the mine life and, therefore, employment, for an additional 25 years. This promises prosperity and continued stability for the communities.

I urge the Federal Bureaus and Departments involved to move with all possible haste to provide the necessary permits to allow Cyprus to expand its leach facility as proposed.

Sincerely,

3011
21

WHEELER & ASSOCIATESTM BLM-21 and FS-4

ARIZONA RANCH MANAGEMENT
INC.

P.O. Box 2792
Globe, Ariz. 85502
(520) 425-3017
Fax (520) 425-3017



BLM-AZ STATE OFFICE

MAY 27 1997

May 22, 1997 From: Cyril Dwyer, State Office
Globe, Arizona

RESPONSE TO BLM LETTER 21 AND FS 4

Thank you for your comments and the additional information.

To whom it may concern,

This letter is in reference to Cyprus Miami Mining Co's Draft Environmental Impact Statement regarding mine expansion.

It goes without saying that copper mining is essential not only to the economic stability of the copper mining towns and the State of Arizona, but also to the nation as a whole. During long periods of peacetime it is easy to forget that these mines are essential for our very survival at times of war and for Federal Agencies to develop and implement irresponsible, unfounded environmental policy designed to curtail domestic production in lieu of foreign production is unconscionable.

There is no doubt, on the other hand, that mining and other land uses must be accomplished in a manner that limits long term environmental impact to the very minimum that is both economically and environmentally possible.

Without a doubt Cyprus Miami Mining Co. has not only been a leader in environmental cleanup and enhancement but also the leader in the development of new technology as demonstrated by the extremely successful ongoing tailings remediation project with the use livestock as a tool.

My partner, Jesse Mitchell, and I have been impressed by the dedication that the Cyprus Miami Mining Co. has toward it's environmental responsibilities. We gained this knowledge first hand while contracting with Cyprus to implement and develop this new and untried technology on mine tailings. A technology that other companies were unwilling to consider at that time because of its departure from other accepted technology.

Knowing, first hand, the dedication and track record of Cyprus Miami Mining Co. to be environmentally responsible I can say without a doubt that this mine expansion will be accomplished in the most environmentally acceptable way possible.

Sincerely



Terence O Wheeler
Ecologist, Range/Watershed Specialist



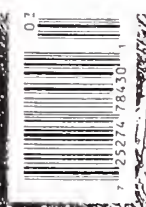
BY OVERHEAD STEW, THE TEXAS BADLANDS CONFESOR, AND BY A. J. W. D. C. 1971

RANGE

THE HISTORY OF AMERICA

**DARK
SCIENCE
AT OUR
NATIONAL
PARKS**

WATCHING RABBIT
by AUGUSTE



"No convincing evidence supports the theory that herbivory benefits grazed plants."

JOY BELSKY, PH.D.,
THE AMERICAN NATURALIST,
JUNE 1986, P.887.

CONVINCING



EVIDENCE

Story and photos by Dan Dagget

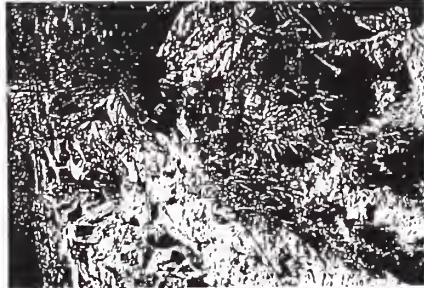
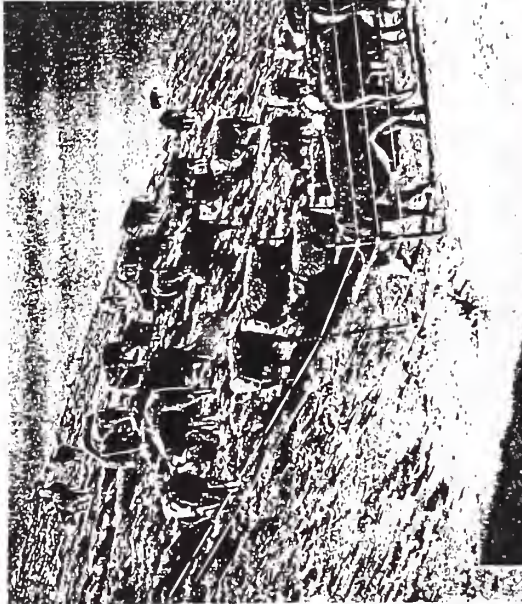
The first time I saw the results of Terry Wheeler's ingenuity I almost fell out of the truck. I knew he had pioneered the practice of using cattle to reclaim mine tailings but I wasn't ready for anything of this magnitude. What I saw when I drove over the hill into Miami, Ariz., home of the longest continuously operating project of this sort, didn't look real. It looked like one of those computer-generated backgrounds used in movies such as Raiders of the Lost Ark. A three-hundred-foot-high pile of mine tailings stood on one side of Miami's main street and dwarfed the restaurants and discount stores on the other. And all three hundred feet of that slope were covered with grass, put there by an agent most of the inhabitants of these United States will tell you with absolute certainty is the planet's most effective destroyer of grass. That grass was put there by cows.

As a stark testimonial to what this entire area must have been like before Wheeler's innovation, a stiff wind blew hundred-foot-high plumes of black dust off another unreclaimed pile of tailings beyond those grass-covered ones. "I wonder locals had joked that the wind would blow restaurants across from the mine to wherever served 'tailings tacos,'" Wheeler has been a range manager and consultant most of his working life; on Indian reservations and even internationally. After returning from a trip to Africa, where he had taught range management at the National University of Lesotho and had seen the extent of the desertification problem facing that nation, Wheeler said that he was at the low point of his career. "I'd been in range management for 28 years, and I was convinced we were losing the battle, and I didn't know what we could do to change it."

While consulting for a corporation out of Phoenix, Wheeler was offered an opportunity to attend a class on Holistic Resource Management in Albuquerque, N.M. He went, and as he heard how cattle could be used as a tool to restore rangelands his years of experience on the range suddenly began to make more sense than it ever had before. "Over in Africa I'd seen making the desert bigger and doing a good job of it. Now, if this stuff would work, I saw how I could make the desert smaller."

Since Wheeler had been doing a lot of consultation work for his new employer (and went to those piles of tailings—rocks pulverized as fine as talcum powder and made sterile by chemicals used to extract copper and other minerals. "I stopped thinking of that stuff as toxic waste and started thinking of it as the most basic building block of soil-rock dust. And then I started thinking about natural succession and about what would have to happen to turn that raw material into real living soil. That's when I realized that animals were the key."

The process, as Wheeler imagined it, is simple. "Soil's a living thing," he said. "There's over a billion micro-organisms on the square inch of it." Wheeler believed that by enriching the tailings with organic material in the form of hay and by having cattle not only trample that hay into the soil but add the microbes from their droppings to the process of decay that would impart the process of decay that the essence of a living soil, he could come up with a way to reclaim mine tailings that wasn't just a bandage. He believed that would actually turn those piles of ster-



Tailings-reclaiming cows tucke acres where importing topsoil, seeding, fertilizing, and irrigating have failed. Note abandoned irrigation tubes in photo at right and compare technology's failure with the results cows get on the inset, above.
OPPOSITE: Convincing evidence—the grass covered portion of these mine tailings has been reclaimed using only cows and natural ecosystem processes.

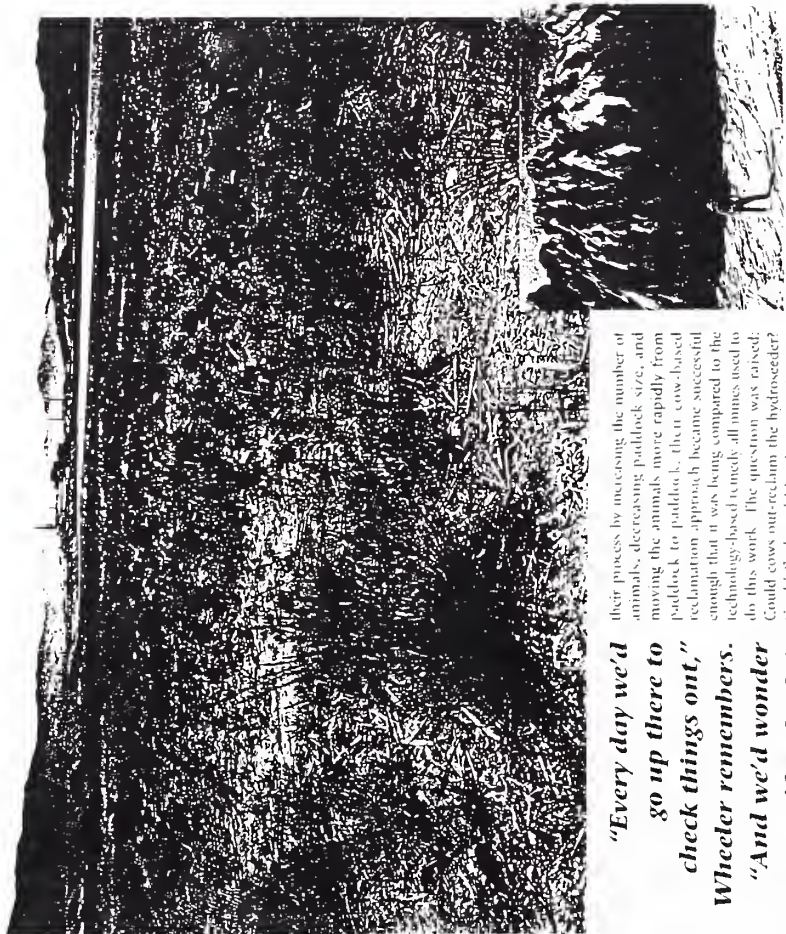
ile particles into a living ecosystem.

When Wheeler explained his idea to Jesse Mitchell, his friend and sometimes co-worker, Mitchell took Wheeler to see something that he had noticed but hadn't realized as significant. They went to the edge of a tailings dump and looked at where cattle and deer had strayed onto the barren surface. "There were footprints out there," Wheeler said, "and manure had blown into some of them, and that was the only place anything was growing."

Confident that they could turn this accidental, natural effect into a useful reclamation tool, Wheeler and Mitchell made their pitch to several mining compa-

nies. Finally, they were given an opportunity to try their idea on the Cyprus Miami Mining Company's 1,100-acre tailings pile just a short drive from Wheeler's home town of Globe, Ariz.

"We started out in August, and in Arizona that's no time to hang out on top of a pile of rock dust," Wheeler said. The temperatures of the Arizona summer were well over a hundred, and as the dust storms swirled, and the dust turned to mud in their sweat, they began to wonder if they hadn't bitten off more than they could



ABOVE: The author stands in front of an erosion-carved wasteland—the result of 40 years of waiting for nature to reclaim this pile of mine tailings in Miami, Ariz. **AT TOP:** An area that once supported only dust storms now is home to a cow-created grassland thanks to Terry Wheeler and his innovative ecosystem management. The Cypress Miami Mine buildings are in background.

their process by increasing the number of animals, decreasing paddock size, and moving the animals more rapidly from paddock to paddock. Their cow-based reclamation approach became successful enough that it was being compared to the technology-based remedy all mines used to do this work. The question was raised: Could cows out-reclaim the hydroseeder? Could flesh and blood critters that are roundly considered to be destroyers of grass be more effective at making it grow than a machine that sprayed a carefully measured mixture of seeds, fertilizer, and plasticized mulch?

The answer came via a crisis that could have been straight out of a Hollywood Western. In 1992 the rains fell so heavily on the Miami mine that slabs of the skint-thin layer of hydroseeder-planted grass washed off the steep slopes of the Tailings pile. At the same time, people working for the mine noticed that erosion on slopes reclaimed by cattle was minimal. Those slopes were more stable because cows not only plant grass and fertilize as they reclaim, they push the mulch deep into the tailings and terrace the slopes with a tight

network of trails. The cows were moved onto the area to repair the damage, and it worked. And since one of the slopes that slipped faced Miami's main business strip everyone in town knew that the cows had saved the day.

Cattle have since become the main means of reclamation at the Cypress

“Every day we’d go up there to check things out,” Wheeler remembers, “and we’d wonder if we hadn’t gone just stark-raving nuts.”

Days and then weeks went by and one day Mitchell came into Wheeler’s office and said, “I found one.”

“One what?” Wheeler asked.

“Our first seedling,” Mitchell answered. “We almost burned that sucker up taking photos of it.” Wheeler looked

As the pain increased the directness of

As the pain increased the directness of



Terry Wheeler (in black hat) explains his holistic reclamation technique to range scientist Norman Love as Wheeler's grassland-creating cows go about their business.

Miami Mine. "We've never found anything that works better on steep slopes," says Gary Jones, Cyprus Miami protest engineer for the cattle-based reclamation project since its inception. "It seemed innovative at the time, but it's pretty common now," Jones continued. "Most of the mines I know of [in Arizona] are using cattle in some way."

Jones says he has had just about every group that's willing take a field trip out to the tailings to come and see the results of using cattle as a reclamation tool. And, he says, the verdict has been almost unanimously positive. Some die-hard cattle-free advocates, however, aren't willing to concede even this beneficial impact to their sworn enemy. "Anybody can spread cow shit over a hillside and get grass to grow," wrote one critic. Others raise concerns about the health of the cows and the quality of the beef they produce. But the cattle's blood and tissue are tested for toxins and unusual concentrations of trace elements, and in eight years none have shown up.

For a tool as powerful and as simple as this there are obviously going to be plenty of challenges, and some, no doubt, will be downright exotic. A couple of years ago Wheeler received an inquiry from the Philippines where someone wanted to know if cows could be used to stabilize the ash from the eruption of Mount Pinatubo. "I told them, you bet they can," said Wheeler, who enjoys challenges and wets them out. His god is to someday take on the "Loxie Twinkie" (a pile of yellow mine waste in Leadville, Colo.).

restoration methods to return apparently overworked rangelands to productivity and profitability.

"My goal is to create functioning ecosystems, not just grow grass on mine tailings," says Wheeler, who views the beneficial application of cow-based restoration, both on mine wastes and on degraded rangelands, as a means toward the revitalization of rural western communities. Most of all, however, Wheeler sees the method he has created as a powerful learning tool.

"Everybody I've taken out and showed this to has been completely amazed," he says. "When they see the results they all say something like, 'I never even knew anything like this was possible; all we ever hear about is how everything is in such terrible shape.' Maybe the most valuable thing these cows can do is wake people up to the fact that humans can use nature's own processes to heal the scars we have to make to be able to live." ■

Dan Pappert is the author of "Rising Six: Range Land Conflicts, a Pulitzer Prize-nominated book on ranch life, environmentalists working together. He is also a public speaker in increasing demand throughout the West. You can opt of his book or information on his presentations contact The Cowi Strategists, 19064 P.O. Box 22713, The Dalles, Ore. 97068, or call 1-530-774-4801.



BLM - 22

SOUTHWEST ENERGY, INC.
2040 WEST GARDNER LANE
TUCSON, ARIZONA 85705-2208
(520) 623-9495
(520) 293-2858 FAX

RESPONSE TO BLM LETTER 22

BLM-AZ STATE OFFICE

MAY 28 1997

Thank you for your comments.

May 27, 1997

BLM Project Manager
Ms. Sheila McFarlin
Arizona State Office, AZ-917
222 N. Central Ave.
Phoenix, Arizona 85004

Dear Ms. McFarlin:

As an employee of a supplier to the mining industry and having reviewed the draft EIS for the Cyprus Miami Leach Expansion Project I would like to express my support for the project. I ask the BLM to approve Alternative A of the DEIS.

Ten (10) federal and state agencies had an opportunity for input into the DEIS and no major problems were identified with the fifteen areas of concern. No wildlife in the area is listed on the endangered species list and all affected species will recover during the reclamation period. Both the surface and ground water will be minimally impacted, with the surface water not leaving the mine site. Air particulate emissions will be reduced under Alternative A, as compared to the current plan. No other major issues have been identified in the DEIS. The joint-agency task force reviewed fifteen (15) alternatives to the proposed plan of operation submitted by Cyprus Miami and developed Alternative A changing the mining sequence to lessen the impact to the Oxhide leach facility. The company noted in the public hearing on May 14th in Miami that they supported the alternative developed by the task force, suggesting the EIS system is working as designed.

The lack of significant impacts to the environment in an area rich with mining activity, and an economic benefit to the federal, state, and local economies of \$1.1 billion over the life of the project suggest this is a project the BLM should approve. The benefits of the project are further enhanced by Cyprus' commitment to post a bond for reclamation. I would request the BLM and Forest Service issue the final EIS in a timely manner. The alternative plan of operations can be implemented in such a manner to minimize the impact to the environment, while still providing positive economic benefits to the state of Arizona and its people.

Sincerely,

Thomas D. Toole
Operations Engineer

May 27, 1997

BLM Project Manager
Ms. Sheila McFarlin
Arizona State Office, AZ-917
222 N. Central Ave.
Phoenix, Arizona 85004

BLM-AZ STATE OFFICE

MAY 28 1997

Thank you for your comments.

Dear Ms. McFarlin:

Having attended a public hearing and reviewed the DEIS for the Cyprus Miami Mining Corporation Leach Facility Expansion Project I would like to go on record as supporting the project, specifically Alternative A to the proposed action. The support by Cyprus of the joint-agency alternative to their initial operating plan shows the EIS system can work to the benefit of all the parties involved.

As to the DEIS itself, it should be noted ten (10) Federal and State agency's had input into the key review items during the scoping portion of the process. Of the fifteen (15) key items noted in the scoping portion of the process no major problems have been identified. No wildlife listed on the endangered species list is found in the affected area. The ground and surface water will be minimally impacted. The land in question can not be accessed easily as it is surrounded by active mining. In short the items noted for review have no significant problems; or the problems will be mitigated prior to the project, or during the reclamation work. The joint-agency task force further reviewed fifteen (15) alternatives and came up with alternative A. Alternative A supported by Cyprus Miami Mining Corporation reflects a third party effort to come up with the most beneficial plan of operations with the least environmental impact to the area in question. This effort by the BLM, the Forest Service and Cyprus Miami shows the EIS system can work to the benefit of both the environment and the surrounding community.

The economic benefit of over \$1.0 billion during the extended mine life is positive for the community of Globe and the State of Arizona. The BLM and Forest Service should issue the final EIS in a timely manner so the record of decision for the Miami Leach Expansion Project can be approved without delay.

Sincerely,

BLM - 24

RESPONSE TO BLM LETTER 24

Thank you for your comments.

BLM-AZ STATE OFFICE

May 22, 1997

Sheila McFarlin, Project Manager
Bureau of Land Management
Arizona State Office
222 Central Avenue
Phoenix, AZ 85004-2203

MAY 29 1997

Dear Ms McFarlin:

After having studied the main points of the Draft Environmental Impact Statement of Cyprus Miami Mining Corp. for their leach expansion project at the mine, it appears that they have all the environmental protections in place.

The BADCT is demonstrated with their design of the composite liner system under the pad which includes leak detection and collection. It is also shown in the double lined collection reservoirs.

The bond guaranteed performance for ground and surface water monitoring along with a comprehensive closure and reclamation plan is another big plus.

These considerations in addition to the huge economic benefit the area as well as the state of Arizona are just too much to keep this project from proceeding to completion.

In conclusion, I urge you to do your part in getting the needed approvals to permit this new breath of life in eastern Arizona.

Sincerely,

Concerned Citizen

May 28, 1997

BLM Project Manager
Ms. Sheila McFarlin
Arizona State Office, AZ-917
222 N. Central Ave.
Phoenix, Arizona 85004

BLM-AZ STATE OFFICE

MAY 30 1997

Thank you for your comments.

Dear Ms. McFarlin:

As an employee of a supplier to the mining industry and having reviewed the draft EIS for the Cyprus Miami Leach Expansion Project I would like to go on record as supporting the project. I ask the BLM to approve Alternative A of the DEIS.

Ten (10) federal and state agencies had an opportunity for input into the DEIS and no major problems were identified with the fifteen areas of concern. No wildlife in the area is listed on the endangered species list and all affected species will recover during the reclamation period. Both the surface and ground water will be minimally impacted, with the surface water not leaving the mine site. Air particulate emissions will be reduced under Alternative A as compared to the current plan. No other major issues have been identified in the DEIS. The joint-agency task force reviewed fifteen (15) alternatives to the proposed plan of operation submitted by Cyprus Miami and developed Alternative A changing the mining sequence to lessen the impact to the Oxhide leach facility. The company noted in the public hearing on May 14th in Miami they supported the alternative developed by the task force, suggesting the EIS system is working as designed.

The lack of significant impacts to the environment, an area already rich in mining activity, and an economic benefit to the federal, state, and local economies of \$1.1 billion over the life of the project suggest this is a project the BLM should approve. The benefits of the project are further enhanced by Cyprus' commitment to post a bond for reclamation. Although the amount has not been calculated the amount should be in the \$2 million to \$4 million range. I would request the BLM and Forest Service issue the final EIS in a timely manner and further issue a positive record of decision. The alternative plan of operations can be implemented in such a manner to minimize the impact to the environment, while still providing positive economic benefits to the state of Arizona.

Sincerely,

BLM - 26

BLM-AZ STATE OFFICE

Ms. Sheila McFarlin
Bureau of Land Management
Arizona State Office
222 Central Avenue
Phoenix, Az 85004-2203

MAY 30 1997

RESPONSE TO BLM LETTER 26

Thank you for your comments.

Re: Cyprus Miami Mining Corporation Draft Environmental Impact Statement

Dear Ms. McFarlin,

I am writing to you as a concerned citizen in support of the above mentioned project. As you know the Globe/Miami area has a long and distinguished history of hard rock mining in the area. Mining has directly supported people in the area for generations. It has also indirectly supported citizens of this state and of our country.

As the draft EIS has pointed out with a great deal of clarity mining can continue in this district while protecting the environment and preserving history. We all need to be clear on the point of continuing operations. Due to fact that so little land is privately held in this state in general and the EIS area in particular it is critical that some of the public land is made available for mining. What better place to allocate public land for mining than a one hundred year plus old mining district?

In my opinion, potential environmental concerns have been brought to the surface and addressed by Cyprus Miami Mining. Several aspects of the project such as the Little Pinto impoundment will improve the quality of the riparian area in Little Pinto Canyon. Other concerns that deal with historical sites have been mitigated.

In closing I would like to take this opportunity to encourage the BLM to move as quickly as the law allows to approve this project that is so important to the people of the area.

Sincerely,

Thank you for your comments.

Shela McFarlin, Project Manager
Bureau of Land Management
Arizona State Office
222 Central Avenue
Phoenix, AZ 85004-2203

Dear Ms. McFarlin,

Please accept this as my personal letter of support for the proposed Cyprus Miami Mining Corporation BL Leach Pad Expansion. The project has many significant benefits for the local communities of Globe and Miami as well as for Gila County and the State of Arizona. This project generates a huge economic impact of \$2.9 billion dollars, some of which goes to support local, state and federal governments.

The project is environmentally sound and is designed to meet or exceed best available demonstrated control technology (BADCT) as required by the State of Arizona. The project has many environmental attributes, including a composite liner system underlying the leach pads, double lined collection reservoirs and leak collection/recovery system.

The above two major points, positive economic impact and many environmental considerations, make this a very important project for all concerned. Therefore, I recommend that this project be approved as expeditiously as possible.

Thank you for your attention.

Sincerely,

BLM-AZ STATE OFFICE

JUN 3 1997

BLM - 28

RESPONSE TO BLM LETTER 28

May 27, 1997

BLM Project Manager
Ms. Sheila McFarlin
Arizona State Office, AZ-917
222 N. Central Ave.
Phoenix, Arizona 85004

Thank you for your comments.

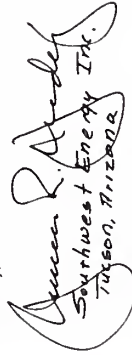
Dear Ms. McFarlin:

As an employee of a supplier to the mining industry and having reviewed the draft EIS for the Cyprus Miami Leach Expansion Project I would like to go on record as supporting the project. I ask the BLM to approve Alternative A of the DEIS.

Ten (10) federal and state agencies had an opportunity for input into the DEIS and no major problems were identified with the fifteen areas of concern. No wildlife in the area is listed on the endangered species list and all affected species will recover during the reclamation period. Both the surface and ground water will be minimally impacted, with the surface water not leaving the mine site. Air particulate emissions will be reduced under Alternative A as compared to the current plan. No other major issues have been identified in the DEIS. The joint-agency task force reviewed fifteen (15) alternatives to the proposed plan of operation submitted by Cyprus Miami and developed Alternative A, changing the mining sequence to lessen the impact to the Oxhide leach facility. The company noted in the public hearing on May 14th in Miami they supported the alternative developed by the task force, suggesting the EIS system is working as designed.

The lack of significant impacts to the environment, an area already rich in mining activity, and an economic benefit to the federal, state, and local economies of \$1.1 billion over the life of the project suggest this is a project the BLM should approve. The benefits of the project are further enhanced by Cyprus' commitment to post a bond for reclamation. Although the amount has not been calculated the amount should be in the \$2 million to \$4 million range. I would request the BLM and Forest Service issue the final EIS in a timely manner and further issue a positive record of decision. The alternative plan of operations can be implemented in such a manner to minimize the impact to the environment while still providing positive economic benefits to the state of Arizona.

Sincerely,



Steven R. Atwood
Southwest Energy Inc.
Tucson, Arizona

BLM-AZ STATE OFFICE

JUN 3 1997

BLM - 29 and FS - 9
SCHWARZ LUMBER COMPANY
P.O. Box 1007
Miami, Arizona 85539
Phone: (520) 472-3571 Fax: (520) 472-4122

RESPONSE TO BLM LETTER 29 AND FS 9

May 20, 1997

Thank you for your comments.

Sheila McFarlin, Project Manager
Bureau of Land Management
Arizona State Office
222 Central Avenue
Phoenix, Arizona 85504-2203

Re: Cyprus Miami Mining - Draft Environmental Impact Statement

Dear Ms. McFarlin:

I would like to take this opportunity to comment on Cyprus Miami Mining and their Leach Expansion Project. As a native of this area, I have seen many changes at this mine. The current management of Cyprus Miami seems to be taking an aggressive approach towards cleaning up from previous mining practices with considerable thought towards the environment in their present operations. As a contractor that performs work within the mine site, we are constantly reminded by Cyprus about proper disposal of construction debris; whether it be where to take empty spray paint cans, to who to contact if something of a more serious nature is encountered.

Approval of this project would be a great boost to the long term stability of the Globe-Miami area. Mining is and always has been the backbone of these communities providing not only jobs within the mines also, they impact every business in the area whether they deal with them direct or benefit from the trickle down effect.

Cyprus Miami is a generous contributor to our local charitable organization and a strong supporter of our youth, be it sports programs or the 4-H clubs.

In closing I would like to say that I support this expansion project and feel Cyprus Miami would be diligent in the management of this operation if approved.

Sincerely,



Bart R. Byrne
President and Manager

BLM-AZ STATE OFFICE

JUN 3 1997

v/b

**RESPONSE TO BLM LETTER 30**

Thank you for your comments.

BLM-AZ STATE OFFICE

JUN 4 1997

June 2, 1997

Sheila McFarlin, Project Manager
BUREAU OF LAND MANAGEMENT
ARIZONA STATE OFFICE
222 North Central Avenue
Phoenix, Arizona 85004-2203

Dear Ms. McFarlin:

The following comments are submitted on behalf of the Arizona Association of Industries (AAI). AAI represents over 550 manufacturing companies in the State of Arizona as well as the professional entities that serve the manufacturing community. Cyprus Miami Mining Corporation is one of our members.

AAI strongly endorses the proposal of Cyprus to construct new leaching facilities and an overburden deposition site at its Miami, Arizona plant. Having reviewed the Draft Environmental Impact Statement (DEIS), we believe it accurately states the range of potential environmental impacts that will result from construction and operation of the new facilities proposed by Cyprus; that the DEIS is in compliance with the applicable NEPA requirements; and that alternative A as described in the DEIS will result in a number of environmental benefits as well as providing significant positive economic benefits to the Miami community.

We would specifically ask you to consider the following:

- The proposed facilities will be designed to the State of Arizona's best available demonstrated control technology standards which are the state-of-the-art standards in the mining industry as far as minimizing or eliminating adverse impacts to ground water and surface water from mining activities.
- Air quality will actually improve as a result of the more efficient, effective and accessible operations that will be made possible by the new facilities. The project will be subject to extensive ground and surface water quality monitoring requirements to ensure that its state-of-the-art pollution control technology will continue to function as intended.
- As the DEIS makes apparent, the project will comply with all historic preservation, mine safety and reclamation requirements.

Sheila McFerlin
June 2, 1997
Page Two

- Last but certainly not least is the tremendous economic benefits that will be realized by the Miami community because of the continued operation of the Cyprus Mineral complex and the jobs and resources that will continue to be available to the community because of Cyprus' continued operations.

AAI appreciates the opportunity to comment on the DEIS and urges the Federal Government to move quickly to a final DEIS and approval of the Cyprus proposal.

Very truly yours,



Nancy Russell
President & CEO



OFFICIAL FILE
Return to Customer Service

BLM - 31 and FS - 7

RESPONSE TO BLM LETTER 31 AND FS 7

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

Fife Styngton, Governor

Russell F. Broades, Director

May 29, 1997

Ms Shela McFarlin
Project Manager
Bureau of Land Management
Phoenix Field District
2015 W. Deer Valley Rd.
Phoenix, Arizona 85027

Thank you for your comments.

BLM-AZ STATE OFFICE

JUN 2 1997

Re: Draft Environmental Impact Statement for Cyprus Miami Leach Facility Expansion Project
Miami, Arizona, April 1997

Dear Ms. McFarlin:

The Arizona Department of Environmental Quality, Division of Water Quality, Nonpoint Source Unit (NPS), appreciates the opportunity to comment on the Draft Environmental Impact Statement for Cyprus Miami Leach Facility Expansion Project Miami, Arizona. At this time it is too early for ADEQ to fully assess environmental impacts for a section 401 of the Federal Clean Water Act and ARS § 49-202 of the State Environmental Quality Act certification. ADEQ requests that when the project(s) is/are finalized that the following be submitted for NPS 401 Water Quality certification:

- a detailed map(s) showing exact location of the project(s);
- a precise description of the activity(s) that will be occurring on the project(s); and
- a water quality management plan containing an implemented strategy used to comply with Surface Water Quality Standards. The water quality management plan shall include:
 - an identification of rivers/streams or water bodies which will, with reasonable probability, be impacted by the activity(s);
 - the management practices (Best Management Practices/Guidance Practices) to be implemented by the owner/operator to maintain compliance with Surface Water Quality Standards; and
 - a monitoring plan to document implementation of the Water Quality Management Plan and compliance with Surface Water Quality Standards.

The Arizona Department of Environmental Quality would appreciate receiving information on the progress of the project(s). Thank you for your cooperation, should you have any questions, please contact me at (602) 207-4535, 1-800-234-5677 ext. 4535 (Arizona Only) or FAX (602) 207-4467.

Sincerely,

Karl F. Meyer
Nonpoint Source Unit

cc: Larry Stephenson, ADEQ



RESPONSE TO BLM LETTER 32 AND FS 15

P.O. Box 52025
Phoenix, AZ 85072-2025
6021 236-5900

BLM-AZ STATE OFFICE

June 5, 1997

JUN 9 1997

Mr. Paul Stewart, Co-Project Leader
Tonto National Forest
2324 E. McDowell Road
Phoenix, AZ 85006

and

Ms. Sheila McFarlin, Co-Project Leader
Bureau of Land Management
Arizona State Office (AZ-917)
222 North Central
Phoenix, AZ 85004

Dear Mr. Stewart and Ms. McFarlin:

RE: DRAFT EIS CYPRUS MIAMI MINING CORPORATION LEACH FACILITIES
EXPANSION

Salt River Project Agricultural Improvement and Power District (SRP) is a political subdivision of the State of Arizona which provides electric service in a 2,900 square-mile service territory in parts of Maricopa, Gila and Pinal Counties in Arizona. SRP administers water rights of a 240,000 acre area and operates an extensive water delivery system with six lakes.

We have reviewed the subject draft EIS and would like to provide you with the following comments:

Water Right Issues:

There are two water right issues which may be of some concern to SRP shareholders as senior downstream water right holders. First, the expanded project will require the current drainage patterns to be altered. Surface water originating up-gradient from the new leach fields will be diverted around the facilities to down-gradient sumps and ponds. The water will either evaporate or be reused at the mine. To the extent that additional surface water (water not currently captured by existing sumps and ponds) is captured and reused at the mine, Cyprus will have to acquire a water appropriation under State law for the use of this water.

32a

Second, there are 22 water right filings located in the area impacted by the expanded project. These filings include three Certificates of Water Right, one Application to Appropriate, one Federal Reserved Right, seven Water Right Registration Act filings and ten Stockpond Registration Act filings. SRP would like to remind Cyprus of SRP's participation and required consent to all Severance and Transfers within the Salt River watershed as legislated in A.R.S. §§ 45-172. SRP's consent must be obtained prior to formal application for the Severance and Transfers with the Department of Water Resources.

32b

32a. Additional text was added as indicated (see page 2-5 of the FEIS).

32b. Comment noted.

Mr Paul Stewart
Ms Sheila McFarlin
June 5, 1997
Page 2

Surface and Groundwater Issues:

The report agrees that adverse impacts to surface and groundwater are anticipated after all mining measures would have been implemented. Such impacts would be limited to on-site locations. Considering the potential impacts of the dewatering process, and the fact that Cyprus is expected to operate as a zero-discharging facility with respect to surface water sources, the following concerns are addressed:

- **off-site designation and delineation:** there is no specific process or design for establishing the limits and boundaries of mine-activity influence; in this regard, environmentally sensitive chemical and/or geochemical parameters may be useful for such a determination, since most of the area is already prone to mine-related contamination.
- **points-of-compliance:** the report is not quite clear on how points-of-compliance would be set; there are other factors controlling water quality in the area: faults/fractures, extent and degree of weathering, historical/on-going mining activities, subterranean flow (radial flow into the mine pits); these and other factors should be clearly evaluated for proper and relevant compliance monitoring, especially within the three water-bearing units
- **water quality monitoring:** the report indicates that the Aquifer Water Quality Standard (AWQS) is likely to be exceeded down-gradient of leach facility; page 4-25 of the report also asserts that the leach facility would cause no further groundwater quality degradation; these statements appear inconsistent, perhaps targeted water quality criteria should be established as a condition for site-specific water quality compliance and monitoring
- **model assessment:** the groundwater hydrologic modeling and flow down-gradient of the leach facilities (page 4-24) appear relevant to the areas covered by the geo-membrane liner; the model does not address fate/transport and possible leaching of metals and inorganics within and beneath the mine-pits, including similar areas with fracture/joint-controlled flow

SRP appreciates the opportunity to provide comments on the Draft EIS. If you require additional information or have any questions regarding our comments, please contact me at (602) 236-5285

Sincerely,

Steve Anders

Teah Anders
Sr Environmental Scientist
Environmental Affairs

cc: P. Amadi
M. Greenberg
G. Korrumph
D. Roberts
K. Wantuja

RESPONSE TO BLM LETTER 32 AND FS 15 (continued)

32c. The DEIS only addresses impacts as a result of the Proposed Action and Alternatives; impacts and monitoring for the entire area disturbed by the Cyprus Miami Mine are covered in the Area-Wide Aquifer Protection Permit, which is out of the scope of this EIS. Section 4.2.3. describes in detail why impacts to groundwater as a result of the Proposed Action will be contained on-site. Section 4.2.4 describes in detail why impacts to surface water as a result of the Proposed Action will be contained on-site.

32d. Locations and details concerning the groundwater monitoring wells were not available at the time of the April 1997 publication of the DEIS. The second bullet under item 1 of page 4-23 has been modified to read:

"Groundwater quality will be monitored just down-gradient of each leach facility. The Aquifer Protection Permit (APP), not yet granted by the Arizona Department of Environmental Quality (ADEQ), proposes one well down-gradient of the BL facility, four wells down-gradient of the GMC facility, and two wells down-gradient of the Oxhide facility. The wells will be monitored quarterly."

The FEIS considers all of the factors relevant to number, placement, and depth of groundwater monitoring wells that were available in the APP Application and baseline groundwater report. A detailed discussion of the geology of the area related to groundwater occurrence, flow, and quality is contained in the Revised Groundwater Baseline Report by Golder Associates Inc (1995e). This report is summarized in Section 3.3.1 of the DEIS.

32e. The water quality degradation from the leach facilities predicted by the model was fairly minor and would not significantly worsen the groundwater that *currently* exists in the area as described in Section 3.3.1.3.2. Additional text has been added to item 4) on page 4-25.

32f. Modeling of groundwater quality underneath the mine pits was not considered necessary primarily because any contaminated groundwater from the leaching facilities is not predicted to reach the pits; the reasons for this are described in detail in Section 4.2.3.2.1.



RESPONSE TO BLM LETTER 33 AND FS 17

June 6, 1997

Sheila McFarlin, Project Manager
USDA Bureau of Land Management
Arizona State Office
222 North Central Avenue
Phoenix, AZ 85004

Paul Stewart, Project Manager
US Forest Service - Tonto National Forest
2324 E McDowell Road
Phoenix, AZ 85010

BLM-AZ STATE OFF.

JUN 9 1997

RE: Cyprus Miami Mining Corporation Leach Facilities Expansion Project: Comments on the Draft EIS

Dear Ms. McFarlin and Mr. Stewart:

Cyprus Miami and its contractors have completed a review of the draft Environmental Impact Statement for its proposed Leach Facilities Expansion Project. We believe that the document adequately addresses the impacts of the proposed project. As you know, the project has undergone over three years of analysis. All of the agencies' and public's concerns have been addressed. Therefore, we feel that the publishing of the final EIS should go forward without further delay.

Cyprus Miami respectfully submits the following comments related to the draft EIS:

General Comments

Page numbers cited in Table S-2 do not correspond to the referenced sections.

When impacts to cultural resources are discussed, it is mentioned that the impacts will be mitigated. This is also true of the other resource areas like Waters of the US, for example.

The abbreviations need to be made consistent with the abbreviation/acronym table. (i.e. g/l on page 2-15 should be gm/l or gr/l; feet above msl should be ft-above msl)

33a. Table S-2 has been corrected and reprinted in Section 1.3 of this FEIS.

33b. These changes have been made on the acronym table and abbreviations in Chapter 8.0 of the DEIS.

33a

33b

RESPONSE TO BLM LETTER 33 AND FS 17 (continued)

Specific Comments

Page S-6
Table S-2. Summary of Comparison of Impacts by Alternatives

In the "Groundwater" row of the table, the table needs to be specific about what type of standard is being referenced, and whether it is an enforceable standard or a guideline. The analytes listed do not all have Arizona standards as the table would indicate.

The referred to "possible exceedences" are based on a predictive model, the results of which were obtained to assess a worst case scenario for the facilities. Therefore, leakage rates predicted in the model are unlikely and in fact highly improbable. This table box needs to be better explained.

Page S-7

In the "Surface Water" row of the table, with regard to alteration of current drainage patterns, the respective ancestral drainages are already truncated.

With regard to springs and seeps, this water is not "lost". Flow is routed via underdrains to downgradient impoundments.

In the Soils and Reclamation category, the table indicates that 512,884 cubic yards are salvageable. This is the maximum quantity of material that is potentially salvageable. As explained in the document, much of this material is probably not salvageable due to the presence of large boulders and cobbles, and unsafe side-slope conditions.

Page S-8

Tax revenues to Gila county seem high.

Page 2-10
Figure 2-4

This figure should show the foundation underdrain system.

Page 2-11
Section 2.4.2.2

First Bullet. After the word *failings* insert or *suitable* soil.

33c. The Table was changed. The text accurately reflects standards or guidelines and the results of modeling. The table boxes were, of necessity, very brief summaries of the text.

33d. This comment is noted, but has not been added to Table S-2. Surface topography is discussed in several locations in Section 3.3.2.2. of the DEIS.

33e. These changes have been made. The dollars shown on page S-8 are the combined revenues for 17 years, the life of the project. These are the combined accumulated economic gain of \$67,903,000 x 17 years = \$1.1 billion. See Table 3-24, (page 3-87 of the DEIS) combined direct and indirect annual impacts of Cyprus Miami on Gila County (at full-scale production). Tables S-2 and 2-4 have been changed. (Note: The cubic yards of salvageable soil have been corrected to 512,844.)

33c

33d

33e

RESPONSE TO BLM LETTER 33 AND FS 17 (continued)

Page 2-14
Figure 2-6

This figure should show the Leak Collection and Recovery System.

The liner thickness for the contingency level liner detail should be 80 ml.

Page 2-15
Section 2.4.2.8

The SPCC plan has been updated in 1996

2-26
Section 2.4.6.1

It is inaccurate to name Barney Overburden as a "designated stockpile" of Gila maternal. Although Barney is a potential source of Gila materials for future reclamation activities, the best location (i.e. the closest location) for materials will be selected at the time of reclamation.

Page 2-31
Section 2.5

"Improved solution control technologies" are irrelevant to delaying implementation of the Oxhide facility. "New production technologies" are directly relevant to delaying implementation of the Oxhide facility. For example, in situ or microbial technologies may eliminate the need to construct this pad. New technologies may render old technologies economically infeasible.

Page 2-44
Section 2.7.1.0

Cyprus Miami did not "over-design" the leach facilities. The facilities are designed to provide for adequate leaching rate capacity for placement of 30 million tons per year through the planning cycle.

Page 3-24
Section 3.3.1.1.2

The "other corporate members" of the Pinal Creek Group are all mining companies who participate in the clean-up effort.

Solvent recycling is conducted at Cyprus Miami. Not all of the solvents become emissions

33f. These changes have been made. Figure 2-6 is presented on page 2-14 of this FEIS.

33g. The text has been changed; see page 2-2 of this FEIS. We agree that the best materials should be selected at the time of reclamation.

33h. The text has been revised; see page 2-2 and 2-3 of this FEIS.

33f

33g

33h

RESPONSE TO BLM LETTER 33 AND FS 17 (continued)

Page 3-87
See Table 3-23.

Page 3-104
Section 3.10

Change the second sentence to read: The majority of wastes generated are non-hazardous mine wastes, which, for this expansion, means non-acid generating overburden (Gila conglomerate).

Page 4-1
Section 4.0

It is inaccurate to say that mining existing pits, solvent extraction and electrowinning are not able to occur independent of this action. They can and will occur with the no action alternative at reduced rates for reduced periods of time.

Page 4-16
Section 4.2.1.1.1

The reason for the peak emissions in year 2005 under the proposed action is due to long hauls to new and existing leach dumps.

Page 4-24
Section 4.2.3.2.1 (3)

Insert before sentence that begins "The major assumptions...": The model was developed to provide conservative estimates of the impacts of potential seepage. The model is considered extremely conservative and was developed to evaluate impacts from theoretical defects in the liner system.

Regarding the statement that the "major assumptions and conditions" are listed, please be advised that many other important (read major) assumptions are not listed. The assumptions listed are the assumptions most readily understood by a "level 1" reader. A major conservative assumption that is not listed is the assumption that there is no lateral dispersion of leakage through the materials below the synthetic liner.

Please also see section 4.6 on page 4-82 and 4-83. This section needs additional explanation that the groundwater effects are the resulting output from conservative modeling of hypothetical liner defects.

33i. The text has been changed.

33j. Comment noted.

33k. The text has been changed.

33l. The comment addresses two different sections of the DEIS.

- The BLM and Forest Service believe that the one-page description of the leakage prediction model on pages 4-24 and 4-25 is accurate and more than adequate for the general public for which the DEIS is intended. This model has been accepted for the APP Application by the State of Arizona ADEQ.

- The third sentence of the first complete paragraph on page 4-83 of the DEIS has been replaced with: "Groundwater quality will not be affected off-site, but may be degraded for a short distance down-gradient of the leach facilities as predicted by the hydrologic model described in Section 4.2.3.2.1."

33i

33j

33k

33l

RESPONSE TO BLM LETTER 33 AND FS 17 (continued)

Page 4-40
Section 4.2.6.1.6

The last sentence could be misconstrued as a commitment to salvage all succulents and cacti including sensitive species. Cyprus has agreed that succulents and cacti from the proposed disturbance areas would be available for opportunistic salvage prior to disturbance as a mitigation measure for sensitive species.

33m

Page 4-42
Section 4.2.6.2.1

The first paragraph appears to be in error. The DEIS states that the 13,000-acre study area is 2.5% of the AGFD Unit 24B and that 1% of the unit has already been disturbed by mining. The DEIS appears to conclude that 1.5% of 24B would be impacted by the proposed action. If 13,000 acres of 24B is 2.5%, then 1.5% of 24B is approximately 7800 acres, far more than the 1057 acres of proposed disturbance. Assuming that 24B is 520,000 acres (13,000/ 2.5%), then the proposed disturbance is only 0.2% of 24B. Does this effect the other habitat percentage calculations in this section? This needs to be explained more clearly.

33n

Page 4-58
Section 4.2.9

Delete the last paragraph of this section. Replace it with the following:

33o

On a quantifiable basis, mining is the historic and highest and best use of the project sites.

Page 4-79
Section 4.4.1

The discussion in this section is not related to the section heading.

33p

33m. The text has been changed. See the reference to page 4-40 on page 2-6 of this FEIS

33n. Errors were corrected and the text has been changed as indicated on page 2-6 of this FEIS.

33o. The text has been changed as suggested on page 2-6 of this FEIS.

33p. An introductory sentence has been added for reference. See page 2-7 of this FEIS.

Thank you for your consideration of these comments. If you have any questions or need any additional information, please contact me at (520) 473-7161 or Kathy Whitman at (520) 888-1333.

Sincerely,
CYPRUS MIAMI MINING CORPORATION

Kathy Whitman / ky kgw
Kathy M. Spahr
Sr Landman

cc: Kathy Whitman
file

BLM - 34

BLM-AZ STATE OFFICE

JUN 10 1997

RESPONSE TO BLM LETTER 34

June 6, 1997

Thank you for your comments.

Ms. Sheila McFarlin
Project Manager
Bureau of Land Management
Arizona State Office
222 Central Avenue
Phoenix, AZ 85004-2203

Dear Ms. McFarlin;

I support the application of Cyprus Miami Mining Corporation's for additional leach facilities at their Claypool site. The included ground and surface water monitoring procedures will insure the safety of the communities environment and the performance bond is an added "fail safe" benefit. The best available demonstrated control technology planned for the project will allow the area residents to continue to live and work in a community that is clean, safe, and desirable for families.

Thank you for your consideration and I hope you support expedient approval of the project, like myself.

Sincerely,



BLM - 35 and FS - 18

United States Department of the Interior



NATIONAL PARK SERVICE
Tonto National Monument

BLM-AZ STATE OFFICE
HC02 Box 4602
Suzevett, Arizona 85345

IN REPLY REFER TO

N3615

JUN 10 1997

June 6, 1997

Ms. Sheila McFarlin
Project Leader
Bureau of Land Management
Arizona State Office (AZ-917)
222 North Central
Phoenix, AZ 85004

Dear Ms. McFarlin,

Thank you for the opportunity to review the Cyprus Miami Leach Facility Expansion Project Draft Environmental Impact Statement (DEIS). The National Park Service (NPS) has reviewed the DEIS for potential air quality impacts of the project on resources and visitor experience at Tonto National Monument (NM).

As reported in the DEIS, the agency preferred alternative, Alternative A, results in emission reductions below current permitted levels for particulate matter, nitrogen oxides, and sulfur dioxide. Because net air pollution emissions decrease, if Alternative A is chosen, the project is not expected to impact air quality and related values at Tonto NM.

However, if the Proposed Action in the DEIS is selected, then air pollutant emissions would increase significantly. In this case, further air quality analysis and a Conformity determination would be required. The project proponents would then need to prove their air pollution emissions will not cause or contribute to exceedances of national air quality standards and they will comply with all State and Local air quality regulations.

The NPS supports the selection of Alternative A as the preferred alternative for the DEIS. We look forward to hearing what alternative is selected by the lead agencies and appreciate your keeping Tonto NM abreast of future project developments.

Sincerely,

Lee Baiza
Superintendent, Tonto National Monument

RESPONSE TO BLM LETTER 35 AND FS 18

Comments noted. Thank you for your comments.

BLM - 36

RESPONSE TO BLM LETTER 36

Thank you for your interest. A copy of the DEIS was mailed.

BLM-AZ STATE OFFICE

JUN 11 1997

6 June 1997

Ms Sheila McFarlin, Project Manager
US Bureau of Land Management
Arizona State Office
222 North Central Avenue
Phoenix, AZ 85004-2203

Dear Ms. McFarlin,

If still available, I would like to receive a copy of the Draft Environmental Impact Statement for the Cyprus Miami Mining Corporation Leach Facility Expansion Program. I would also like to be placed on your mailing list so that I may receive copies of the Final Impact Statement and the Record of Decision when those documents are available.

Thank You

Sincerely,

J. D. HAYWORTH
6th DISTRICT, ARIZONA

WASHINGTON OFFICE
1023 LONGWORTH BUILDING
WASHINGTON, DC 20515
1-202-225-7190

ARIZONA OFFICES
1017 S. GILBERT ROAD
SUITE 207
MESA, AZ 85204
1-602-928-4151
1-800-874-0067
1300 SOUTH MILTON
SUITE 207
FLAGSTAFF, AZ 86001
1-602-558-9760

BLM - 37 and FS - 14



Congress of the United States
House of Representatives
Washington, DC 20515-0306

QUALITIES
WAYS AND MEANS
SUBCOMMITTEES
HUMAN RESOURCES
SOCIAL SECURITY
VETERANS' AFFAIRS
INCOMMITTEE
BENEFITS

ASSISTANT MAJORITY WHIP

RESPONSE TO BLM LETTER 37 AND FS 14

Thank you for your comments.

June 9, 1997

BLM-AZ STATE OFFICE

JUN 11 1997

Ms. Sheila McFarlin, Co-Project Leader
Bureau of Land Management
Arizona State Office, AZ-917
222 N. Central Ave.
Phoenix, AZ 85004

Dear Ms. McFarlin:

I am writing to express my support for Alternative A to expand the leach and waste rock disposal operations of Cyprus Miami Mining Corporation in Miami, Arizona.

It is my understanding that the proposed Alternative A addresses the various environmental and socio-economic needs of the area. Under the actions of Alternative A, a net beneficial impact to air quality will result in the reduction of particulate matter, nitrogen oxides and sulfur dioxide. The project will also be subject to stringent ground and surface water monitoring and a comprehensive reclamation plan, guaranteed by a performance bond. I am aware that there will also be efforts to mitigate impacts to jurisdictional waters, prehistoric sites and abandoned mines.

Alternative A will extend the project's life for an additional seventeen years, providing an economic gain of \$2.9 billion dollars to local, state, and federal governments while sustaining employment and preserving the local cultural heritage.

I encourage you to support Alternative A to the extent consistent with governing law and regulations.

Best regards,

J.D. Hayworth
Member of Congress

BLM - 38 and FS - 10

Environmental Quality Services
File 4301.3 Cyprus Mine DEIS
(602) 379-6750

BLM-AZ STATE OFFICE

JUN 10 1997

JUN 13 1997

Mr. Charles R. Bazan
Forest Supervisor
Attention: Mr. Paul Stewart
2324 E. McDowell Road
Phoenix, Arizona 85006

Dear Mr. Bazan:

The Bureau of Indian Affairs (BIA) Phoenix Area Office has reviewed the Draft Environmental Impact Statement (EIS) for the proposed Cyprus Miami Mining Corporation Leach Facilities Expansion in Miami, Arizona. We offer the following comments for your consideration in the Final EIS:

1. The section regarding Executive Order 12898 (Environmental Justice) on pages 3-80, 4-10, and 4-53 should be expanded to discuss environmental indicators and how these relate to better define human health, cultural aspects, economic and social outcomes on minority and low-income communities (i.e. Native Americans, Hispanics, etc.) that may be affected by the expansion of the mining facility. Both the Council on Environmental Quality (CEQ) and the Environmental Protection Agency (EPA) have drafted guidance for incorporating environmental justice concerns in National Environmental Policy Act (NEPA) compliance analyses.

2. There is no specific section concerning pollution prevention principles, techniques and mechanisms that can be found in this document as per CEQ and EPA guidance. A discussion on source reduction, treatment technologies, and environmentally sound recycling and disposal practices should be addressed.

3. On Table 1-1, page 1-6, regarding the list of environmental regulatory requirements, we recommend including the new Executive Order 13007 Indian Sacred Sites dated May 24, 1996, which directs Federal agencies to protect and preserve American Indian religious practices and avoid adversely affecting the physical integrity of sacred sites. We also recommend that meaningful dialogue take place with any affected Indian tribes concerning sacred sites in the vicinity of the proposed mine expansion area and appropriate mitigation be established to address concerns by the tribes.

38a

38a. The DEIS describes Gila County's population distribution in Chapter 3. Chapter 4, page 4-53 describes the impact the Proposed Action and alternatives could have on the Native American, Hispanic, or other communities. The BLM and Forest Service determined that potentially adverse impacts of the proposed action would not disproportionately affect Native American tribes or minority and/or low income groups. The DEIS does disclose that under the No Action Alternative, reductions in the workforce would affect Hispanics disproportionately because Hispanic workers comprise a disproportionate share of the Cyprus Miami workforce (Section 4.1.8.2). See also responses 38c, 39k, and FS letter 20a and 20b.

38b. The Cyprus Miami Spill Prevention, Control, and Countermeasures Plan (SPCC) (DEIS 4.2.11) includes the pollution prevention principles, techniques and mechanisms to be implemented in this project. The SPCC will be regularly reviewed by Cyprus Miami and regulating agencies for adequacy throughout the life of the project and revised as appropriate. Further, the project facilities were designed to BADCT standards which include specifications and principles for pollution prevention. These specifications are contained in the Cyprus Miami APP Application. In addition, the DEIS states that no standards would be violated in air quality, water quality, or noise levels beyond the project boundary, therefore discussions as requested in the comment area not deemed necessary.

38c. Executive Order 13007 has been added to Table 1-1.

The Tonto National Forest and the Bureau of Land Management consulted with interested and potentially affected tribes and conducted an ethnohistoric study of the project area to determine the history of Native American use and to identify the existence of sacred areas or other areas of concern, and if needed, appropriate mitigation measures. Six local tribes were invited to participate in the study, which included a literature review, interviews with tribal elders and cultural specialists, and field visits to the project area. The White Mountain Apache, San Carlos Apache, Zuni, and Salt River Pima-Maricopa tribes participated in the study during the spring and summer of 1997. See also Section 3.1 of this FEIS, the Public Participation Process.

38b

38c

4. The discussion on Cultural Resources in Chapters 3 and 4 indicates that intensive archeological surveys were conducted on three parcels totalling 2,900 acres encompassing the proposed project facilities areas. A total of 43 sites were identified. The DEIS stated that these sites were currently being reviewed by the Forest Service, Bureau of Land Management (BLM) and State Historic Preservation Officer (SHPO) to evaluate their eligibility for the National Register of Historic Places.

On page 4-51 of the DEIS it states that 27 cultural properties have been identified within the project areas for the proposed leach pads and five others are located close to these project areas. It also states on page 4-52 that evaluation of prehistoric and historic sites will involve consultation with Indian tribes. If data recovery plans are developed and if a site specific treatment plan is determined as adequate mitigation, will the tribes be involved with the development of such a plan? Is a Programmatic Agreement being developed for this proposed project and do tribes have a role in such an agreement?

5. Since the Forest Service and the BLM are joint lead for this EIS we recommend that a section on Indian trust responsibilities be addressed in the Final EIS. Refer to the Department of the Interior Responsibilities for Indian Trust Resources (i.e. Secretarial Order 3175).

6. Under Chapter 5 Consultation and Coordination for the DEIS preparation on page 5-4, several Indian tribes are listed that were contacted during the scoping process. Based on the Federal Government's trust responsibility to tribes and the government-to-government relationship, we recommend that your agency invite interested tribes to a future meeting to discuss any outstanding issues related to the proposed Cyprus Mine project prior to the publication of the Final EIS.

7. Regarding the discussion of existing water quality in comparison to the projected water quality, a table which indicates the specific anticipated changes in water quality concentrations should be provided. We recommend that the table includes information concerning groundwater contaminants such as sulfates, cadmium, chromium, nitrate, and radioactive materials. A worst-case scenario should be added to determine contaminant projections in groundwater. A discussion of the significance of the existing impact of contamination to the groundwater should be documented in the Final EIS.

We appreciate the opportunity to provide comments concerning this proposal. If there are any further questions, please contact our Phoenix Area Environmental Quality Services staff at (602) 379-6750.

Sincerely,

707 John Philbin

Area Director

RESPONSE TO BLM LETTER 38 AND FS 10 (continued)

38d. Interested and potentially affiliated tribes were given the opportunity to review and comment on the draft Memorandum of Agreement prepared to comply with Section 106 of the National Historic Preservation Act. Interested tribes will be given the opportunity to be concurring parties to the agreement and will be given the opportunity to participate in the development of data recovery plans or other mitigation measures.

38e. The United States has a trust (fiduciary) responsibility, executed through the Secretary of the Interior, to uphold obligations of the federal government to Native American groups. These obligations require a reasonable and good faith effort to identify and consider Native American treaty rights, lands, and tribal government planning and resource management programs. San Carlos Apache tribal lands are located approximately 15 miles east of the proposed mine expansion. The proposed action would have no effect on tribal lands, treaty rights, or tribal government planning and resource management programs. Section 4.2.8 of the DEIS discusses potential economic effects on surrounding communities including the San Carlos Apache Tribe.

38f. Please refer to the consultation process in the public participation discussion in Section 1.5.2 of the DEIS and Sections 3.1 and 3.2 of this FEIS. Also see response No. 38d above.

38g. This comment asks for a table comparing existing water quality in comparison to projected water quality, but does not indicate the location within the Project Area for such a comparison. Groundwater quality was only modeled underneath and down-gradient of the three heap leach facilities, since they are the primary potential "polluters" of groundwater. The results of that modeling are described in Section 4.2.3.2.1, page 4-25. A table of those results was not presented for two reasons:

- The models indicated a potential for cadmium to exceed the Aquifer Water Quality Standard (AWQS); all of the other modeled parameters were less than the AWQS. A full table was not needed to say this, so it was stated in one sentence in Section 4.2.3.2.1.
- Such a table might give the mistaken impression that the numbers in the table represent concentrations that would definitely occur, which is not the case. As the text explains, the results are theoretical given the listed assumptions.

The comment also asks for a worst-case scenario for water quality, but does not indicate for what circumstance. Worst-case scenarios are considered only when insufficient data are available for analysis, which was not the case here. For the reasons described above, no changes to the EIS were made.

cc: Superintendent, San Carlos Agency
Attention: Environmental Coordinator
Superintendent, Fort Apache Agency
Attention: Environmental Coordinator
Superintendent, Salt River Agency
Attention: Environmental Coordinator
Superintendent, Pima Agency
Attention: Environmental Coordinator
Superintendent, Truxton Canon Agency
Land Operations, PAO
Real Estate Services, PAO
Water Resources Management, PAO
Director, Office of Trust Responsibilities
Attention: Chief, Environmental Services Staff
Albuquerque Area Director
Attention: Environmental Quality
DOI Office of Environmental Policy and Compliance
Attention: Regional Environmental Officer - San Francisco
Attention: Terry Martin - Washington, D.C.
Environmental Protection Agency, Region IX
Attention: Clancy Tenley, Indian Programs
Attention: Dave Farrell, Office of Federal Activities
Chairman, San Carlos Tribe
Chairman, White Mountain Apache Tribe
Chairman, Hopi Tribe
Chairman, Yavapai-Apache Tribe
President, Yavapai-Prescott Tribe
Chairperson, Tonto Apache Tribe
President, Salt River Pima-Maricopa Indian Community
President, Fort McDowell Mojave-Apache Indian Community
Governor, Gila River Indian Community
Chairman, Pueblo of Zuni
Bureau of Land Management, Arizona State Office
Attention: Shela McFarlin, Co-EIS Project Leader

BLM - 39 and FS - 19

SOUTHWEST CENTER FOR BIOLOGICAL DIVERSITY



Fonto National Forest
2324 E. McDowell Rd.
Phoenix, AZ 85006
Attn: Cyprus Miami Expansion

BLM
Phoenix Field District
2015 W. Deer Valley Rd.
Phoenix, AZ 85027

June 10, 1997

Enclosed are comments regarding the Cyprus Miami Mining Corp. Expansion proposal DEIS.

1. The range of alternatives is inadequate and does not meet the National Environmental Policy Act (NEPA) and Council on Environmental Quality (CEQ) mandates for analysis of a range of reasonable alternatives. The "fatal flaw" analysis used by the action agencies is aptly named for its usage constitutes a fatal and fundamental flaw upon which the entire DEIS analysis is predicated upon. **39a**
2. There is not an adequate discussion of the 1872 mining law, the controversy surrounding it nor its application in this specific instance. **39b**
3. We request disclosure of the dollar amount of the minerals to be mined as a result of this expansion. **39c**
4. There is no analysis of the environmental effects of the existing mine facility. The DEIS must include actual data from the existing mine in order for the decision maker to take the "hard look" that NEPA requires. What pollution emissions and spill potential or history does the existing facility have or pose? A discussion of and map of the existing facilities and their effects along with the expansion proposal must be presented. The omission of this data along with other shortcomings constitute "fatal flaws" on the part of the action agencies in the DEIS analysis. A supplemental DEIS with the laws rectified should be issued if the project is to proceed. **39d**
5. The purpose and need for the project is not adequately presented in terms of the public need for the project or the product but only in terms of the proponent's economic need, which is of course both obvious and endless. **39e**

RESPONSE TO BLM LETTER 39 AND FS 19

- 39a. The agencies and Cyprus Miami conducted an exhaustive search for reasonable alternatives which is documented in Section 2.2 of the DEIS. Numerous alternatives were identified but eliminated from detailed analysis. The fact that Cyprus Miami is an existing operation and has occupied almost all of its private lands created numerous restrictions in identifying alternatives. The agencies believe the identification and evaluation of alternatives is appropriate.
- 39b. The 1872 Mining Law as amended is the law, and the agencies must comply with the law. The Cyprus Miami proposal is authorized by that law. Controversy concerning the law is beyond the scope of this EIS.
- 39c. The DEIS provided information on copper recovery during mining (Table 2-3). The proposed action estimates total copper recovery as approximately 2.8 billion pounds. The dollar value that this represents can not be accurately estimated due to continual fluctuations in the global copper market and efficiency of Cyprus Miami in controlling operating costs.
- 39d. Chapter 3 of the DEIS adequately describes existing conditions and how those conditions are a result of having the existing mine in place. Figure 2-1 and Section 2.3 describe the existing operations. Much of the information in Chapter 3, including atmospheric emissions and water quality, are directly related to the presence of the mine and existing facilities. Comparing Figures 2-1 and 2-3 clearly present existing and proposed facilities.
- 39e. NEPA requires that the statement specify the need to which the agency is responding in proposing the alternatives including the proposed action. It also recognized that activities subject to NEPA may be initiated by parties other than Federal agencies, as in this case where the action is under the authority of the U.S. Mining laws. In these cases, alternatives are focused on the primary needs of the proponent. The "public need" for the mine or copper is beyond the scope of the decision being made with regard to this project. In addition, public needs are addressed in the environmental regulatory laws and regulations (see Table 1-1 of the DEIS) which the project must comply with and which protect public health and safety.

P.O. Box 17839, Tucson, Arizona 85731-7839 TEL: 520.733.1391, FAX: 520.733.1404
Email: swcbd@sw-center.org, <http://www.envuolink.org/orgs/sw-center>

 post consumer recycled paper

5B. The purpose and need statement and subsequent artificially constrained range of alternatives analysis violates NEPA and the Administrative Procedures Act (APA). The range of alternatives. Page 2-2 of the DEIS describes the "fatal flaw" analysis in determining which alternatives to examine. This artificial and arbitrary narrowing of alternatives is done in a manner inconsistent with the law and policy.

6. The original NEPA documents for the project did not authorize this expansion, the facility has mined at a higher rate than was projected, so the company has exhausted the supply covered in the original NEPA document and is attempting to seize more public lands under the 1872 Mining Law. Cyprus stands to make hundreds of millions of dollars from the mine expansion, and leave the public with a toxic legacy.

7. The mine closure and reclamation plan for the existing project needs to be detailed in the EIS. There appears to be no provision offered for the backfilling and remediation of the pits associated with the existing project. The EIS should include a complete post-action closure plan. The failure of the action agencies to include this is a violation of the undue and unnecessary degradation clause in 43 CFR and of the APA.

8. The 100 year 24-hour storm event is an inadequate measure for the mine site environmental analysis because the likelihood that this threshold will be exceeded is very high as evidenced by the 1993 flood events. A 500 year flood event analysis should be included in the analysis as well. There is not an adequate discussion of the magnitude of recent storm/flood events and the potential toxic discharges from the expanded facility.

9. The impacts of the project and expansion on public health and safety are not adequately addressed. The potential impacts to water resources including drinking water supplies are not adequately addressed.

10. The potential impact to Phoenix' s water supply in the event of a toxic release must be addressed in the DEIS.

11. The potential negative effects on the economy of the area and to social services are not addressed despite a very real potential of the downturn in copper prices creating large unemployment issues in the area.

12. The disproportionate amount of pollution and toxicity that minority communities are exposed to as part of this project is not disclosed or analyzed.

13. Public access and lands available for recreational usage will be lost to this project, this must be quantified and disclosed and mitigated.

14. The negative effects on visual resources must be assessed and disclosed in a meaningful manner.

15. The potential for future mine expansions is not addressed in the DEIS and should be.

16. The proponent does not possess clear title to water rights for the project and absent this, the agencies cannot proceed.

17. The project would destroy nests of two species protected under the Migratory Bird Treaty Act (MBTA) the red-tailed hawk and the cooper' s hawk. This is a violation of the MBTA. The project also violates the Tomto LMP which directs acreage deferrals around raptor nests as well as BLM policy.

RESPONSE TO BLM LETTER 39 AND FS 19 (continued)

39f. It is not clear what "original NEPA document" the commentor is referring to. Cyprus Miami has previously operated largely on private lands that it owned or controlled and the majority of its operations have not required evaluation under NEPA. The Draft EIS was prepared expressly to assess impacts of this proposed expansion.

39g. Backfilling of pits is not currently a federal or state regulatory requirement. A detailed Closure Plan is included in the APP Application to ADEQ. A majority of the mine is on private land and reclamation on private lands is under jurisdiction of the State Mined Land Reclamation Act, and not within the authorities of the public land agencies to require.

39h. The 100-year, 24-hour storm event analysis is used because the minimum design criteria required by the Arizona Department of Environmental Quality (ADEQ) for an Aquifer Protection Permit (APP) is the 100-year, 24-hour storm. The 1993 flood event resulted from two or three 10- to 20-year storm events within a week's time.

39i. As described in detail in Sections 4.2.3 and 4.2.4 in the DEIS, impacts to groundwater and surface water outside of the project area should not occur. Also see response 38g.

39j. Section 3.7.3 discusses the current unemployment rate and the changes in the unemployment rate that have occurred during times of low copper prices. Previous cutbacks in the copper industry have sent the Gila County unemployment rate up to 25.4 percent. From 1980 through 1994 the county's unemployment rate oscillated between 7.4 and 25.4 percent, with the rate remaining less than 11 percent since 1989. As far as the "very real potential of the downturn in copper prices creating large unemployment issues in the area," predicting when a downturn in copper prices would occur would be difficult for the agencies and is beyond the scope of the EIS. This project would not create any new employment and, therefore, would not worsen any potential downturn in the copper industry in Globe-Miami.

39k. There are regulations specifically to address issues related to groundwater quality, air quality and surface water quality. They all require implementation of control technologies that eliminate or limit pollution to standards designed to protect human health and welfare. Cyprus Miami operates in compliance with all applicable regulations including zero discharge limitations under the Clean Water Act, the State of Arizona's groundwater quality regulations and the Clean Air Act. Compliance with these regulations is determined at the Cyprus Miami property boundary, so minority communities are not exposed to pollutants in a disproportionate manner.

While there may be questions on the contribution of airborne tailings to local and regional air quality, tailings are not an issue in the proposed action. Only leach pads will be extended in the proposed action, and they will be used at a level of activity closely comparable to the current level of activity. The leaching and electro-winning process of the proposed action does not produce tailings. Nearly all of the emissions from the proposed action will be PM₁₀ fugitive dust. PM₁₀ has a range of 1-20 miles before it falls out, but at the end of this range, very little PM₁₀ remains in the air. Tribal lands of the White Mountain Apache are more than 45 miles from the proposed project, and San Carlos Apache tribal lands are located approximately 15 miles east of the proposed mine expansion. Therefore, PM₁₀ from the proposed project would not be an air pollution factor on those lands. Regular application of dust palliatives is part of the proposal to further reduce the effect of fugitive dust on air quality in the project area

| 39q

18. The impacts to the longfin dace are unacceptable.

19. The Cumulative Effects to water resources in the municipal watershed of Phoenix and in the Salt River watershed from mining operations and other proposed projects should be addressed in the EIS. | 39r

20. The mitigation offered for the project is unspecified, non committal and meaningless. | 39s

Thank you for your consideration of these matters.

Sincerely,



Peter Galvin

RESPONSE TO BLM LETTER 39 AND FS 19 (continued)

- 39l. The issues brought up by the statement are identified and appropriately dealt with within the DEIS in Table 1-2, pages 1-14 and 1-15; Table 2-1 quantifies the acres affected by ownership.
- Section 3.0.1. Resources Not Likely to be Affected, page 302, states: "Recreation - No effects on recreational opportunities or facilities are expected for the following reasons: There is no significant use of public lands for dispersed recreation in the study area (minor hunting, sightseeing, rock hounding)." As effects on recreation are insignificant in context of the land base for public recreation, this issue is not subjected to further detailed analysis.
- Public access is addressed Sections 3.8.3.3 Public Access, and 3.8.4.4 Forest Service Road management. Public access effects are addressed in Section 4.2.9.4 Public Access, page 4-61, and summarized in Section 4.2.9.6 Cumulative Effects, Page 4-63, with mitigation addressed in Section 4.2.9.7 Mitigation Measures and Monitoring, page 4-64.
- 39m. The effects on visual resources are adequately presented in Section 3.9, 4.1.10, 4.2.10, and 4.3.6. Figures 3-17, 3-18, and 3-19 present views of the areas in which the proposed expansion would take place.
- 39n. Figure 1-1 on page 1-5 of this FEIS presents a reasonably foreseeable projection of mine activity. Actual locations for mine expansion are much more speculative. If Cyprus Miami proposes to utilize additional public lands in the future, it will have to submit a Plan of Operations to the Federal land management agency.
- 39o. The proposed project is located in the Salt River Watershed. To date, water rights claimed in this watershed have not been adjudicated (i.e., the validity, relative priority dates, holdership, etc. have not been fully determined by the courts). However, ADWR holds these claims to be valid until these water rights are adjudicated or proven to be otherwise.
- 39p. Whenever the nests are occupied, Cyprus Miami would comply with agency-mandated acreage deferrals around the nests. Cyprus Miami would remove nests only when the nests were unoccupied, which is not a violation of the MBTA, Tonto LMP, or BLM policy.
- 39q. Transplanting longfin dace to a new and larger impoundment where their population may increase to a size larger than at present is considered adequate mitigation for the impacts to the fish.
- 39r. As stated in Section 4.2.4.5 (page 4-34) of the DEIS, no cumulative effects to water resources as a result of the proposed Cyprus-Miami mine expansion were identified off-site.
- 39s. The agencies believe the mitigation and monitoring sections of Chapter 4 contain appropriate discussions of mitigation measures. Those discussions clearly state when a mitigation measure is already in place at the existing facilities and would be continued, or when a new mitigation measure would be instituted, as well as when a possible mitigation measure has not been committed to by Cyprus Miami. Additionally, final mitigation measures will be incorporated in the Record of Decision and in the Operating Plan, and thereby be enforceable.

BLM PC 00 NRM RMT JUL 08 1997 10:09

Jul 17 '97 10:41

Fax: 602-4179-600 9-1179-100 P.02

FROM BLM P-44 BLM - 40

THE HOPI TRIBE



01 July 1997

Ms. Ginny Newton, Anthropologist
SWCA, Inc, Environmental Consultants
343 South Scott Avenue
Tucson, Arizona 85701

RE: Phase II Cyprus Miami Ethnohistoric Study

Dear Ms. Newton,

Thank you for your letter, dated 10 June 1997, in which you requested a work plan and budget for the Hopi participation in the Phase II Cyprus Miami Ethnohistoric Study. The Hopi Tribe is intending to participate in this project to identify areas of importance to traditional Hopi culture and history. However, prior to submitting this work plan and budget to SWCA, the Hopi Tribe requests the opportunity to review the Carlotta Mine Ethnohistoric Study report that was developed by you for the Tonto National Forest.

The Hopi Tribe has become aware that there may be some cause for concern regarding the Carlotta report in that Hopi perspectives and concerns were not adequately represented. Moreover, it is the understanding of the Hopi Tribe that the Cultural Preservation Office would be provided an opportunity to review a draft of this report, to ensure that the Hopi position was accurately represented to the Tonto National Forest, prior to finalization. The fact that this opportunity for review was not provided to the Hopi Tribe coupled with this apparent cause for concern, the Hopi Tribe is reluctant to enter into a relationship with SWCA regarding the Phase II Cyprus Miami Ethnohistoric Study until these issues are satisfactorily resolved.

The Hopi Tribe's position regarding the Cyprus Miami Leach Facility Expansion Project is that the section 106 compliance responsibilities of the Tonto National Forest and the Bureau of Land Management will be incomplete and insufficient without the Hopi ethnohistoric and ethnographic work. Should you have any questions or require

40a

P. O. BOX 123 — KYKOTSIMONI, ARIZONA — 86038 — (602) 734-2441

RESPONSE TO BLM LETTER 40

40a. Your comments have been noted, thank you.

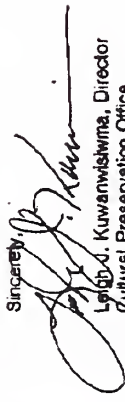
Ferrill H. Seebach
Chairman

Wayne Taylor, Jr.
Vice-Chairman

RECEIVED
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JUL 17 1997 3:17 PM
BUREAU OF LAND MGT
PHOENIX, ARIZONA

BLM RC 50 NRM REXT JUL-88-1997 10:10 FROM BLM PAX FIELD OFFICE TO Jul 17 1997 10:42 P.03 94179400 P.03

Page 2 - July 01, 1997
Letter to Ms. Newton, SWCA, Inc. Environmental Consultants
RE: Phase II Cyprus Miami Ethnohistoric Study
additional information please contact Kurt Dongoska, Tribal Archaeologist, or me at
520/734-2244.

Sincerely,

Leigh A. Kuwanwisima, Director
Cultural Preservation Office
The Hopi Tribe

- xc: S. Wood/Tonto National Forest
- VC. Stone/BLM
- C. Heathington/AZSHPO
- C. Nissley/ACHP
- C. Gleichman/ACHP
- J. Spehar/Cyprus Miami Mining Corporation
- K. Whitman/Whitman & Associates
- T. Euler/SWCA
- S. Carothers/SWCA

FS-3

Cyper DEIS - slash

MAY 21 1997

MIR PAUL STEWART
TENTO NATIONAL FOREST
2324 E. MCDOWELL RD.
PHOENIX AZ 85006

DEAR MR. STEWART

I AM IN FAVOR OF ALTERNATIVE A - MODIFIED DEVELOPMENT SEQUENCE FOR THE CYPRUS MIAMI LEACH FACILITY EXPANSION PROJECT. THE CYPRUS COPPER MINE AND LEACH FACILITY ADDS A TREMENDOUS VALUE TO THE GLOBE-MIAMI COMMUNITY AND GILA COUNTY. THE AMOUNT OF LAND DISBURSEMENT IS SLIGHT IN COMPARISON TO THE BENEFIT RECEIVED INCLUDING: LOCAL TAX REVENUES, EMPLOYMENT, AND PERSONAL INCOME. I SUPPORT ALTERNATIVE A AS IT ALLOWS MINING TO PROCEED WITH SAFE GUARDS IN PLACE FOR ENVIRONMENTAL CONSIDERATIONS.

Sincerely,

RESPONSE TO FS LETTER 3

Thank you for your comments.

Received 5/30/97

FS - 6

RESPONSE TO FS LETTER 6

Mr. Paul Stewart
Tonto National Forest
2324 E. McDowell Road
Phoenix, AZ 85006

May 28, 1997

Thank you for your comments.

Ref: Cyprus Miami Mining Corporation draft environmental impact statement

Dear Mr. Stewart,

I am writing to you to register my support of the above mentioned project. It is my opinion that the mining company has provided enough information to confirm that this project should be approached based on economic impact alone. However, the draft EIS also points to potential environmental issues that have been addressed.

Some of the potential environmental concerns will actually see improvement as the project moves forward. In other cases carefully thought out mitigation measures have been offered to minimize impact. In addition, strict water monitoring is a part of the plan, as well as complete reclamation commitments. These commitments include performance guaranteed by a formal bonding process.

I know that I don't need to impress upon you the significance of this project on the economics of the area. But, the impact is very significant as is pointed out in the draft EIS.

I urge you to take affirmative action on this project in an as expeditious of a manner as possible.

Sincerely,



REPLY TO
ATTENTION OF

Office of the Chief
Regulatory Branch

U. S. Forest Service
Tonto National Forest
ATTN: Mr. Paul Stewart
2324 E. McDowell Road
Phoenix, Arizona 85006

File Number: 954-0192-MB

Dear Mr. Stewart:

The purpose of this letter is to provide an official Corps of Engineers response to the Draft Environmental Impact Statement (DEIS) published in April, 1997 for the proposed Cyprus Miami mine expansion, Miami/Globe, Gila County, Arizona.

The Corps of Engineers, as a cooperating agency, submitted comments dated December 16, 1996 on the preliminary DEIS to the Bureau of Land Management. In reviewing the DEIS, we find that most of our comments of December 16, 1996 were not included nor was text changed regarding Section 404 as we requested. We are resubmitting our comments and request that the appropriate changes be made for the FEIS so we may adopt this document for our Section 404 permit.

Page 1-5, line 2

Please change beginning on line 2 to read "...regulations for the discharge of dredged and/or fill material into waters of the United States including adjacent wetlands". Please delete the word "navigable" in line 4.

Figure 3-10

Please change the acreage of wetlands on the Oxhide Leach facility to .059 instead of .06. This number is not rounded up in any other portion of the document and consistency should be maintained

FS - 11

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, CORPS OF ENGINEERS
ARIZONA-NEVADA AREA OFFICE
3636 NORTH CENTRAL AVENUE, SUITE 760
PHOENIX, ARIZONA 85012-1936

June 5, 1997

RESPONSE TO FS LETTER 11

- 11a. The changes have been made; see page 2-1 of this FEIS.
- 11b. The changes have been made; see page 2-5 of this FEIS.
- 11c. The paragraph has been revised; see page 2-6 of this FEIS.

11a

Page 4-33, 4.2.4.4

The text on mitigation for Section 404 should have been included in Section 4.2.4.6 as another "bullet". At the very least, in the first and second bullets describing the Corps mitigation plan, please change "...acres of lost washes..." and "...acres of lost surface impoundments..." respectively to "...acres of impacted washes..." and "...acres of impacted surface impoundments...". Additionally, in the last bullet on that page, wetland vegetation will be planted, it will not be allowed to just develop. Please state that "... wetland vegetation that will be planted around...."

11b

Page 4-40, 4.2.6.1.6

The Corps would like to see this paragraph changed to reference the previous information on the Section 404 mitigation as indicated on pages 4-33 and 4-34. In addition, this paragraph appears to indicate that the Corps will be responsible under their habitat mitigation and monitoring plan for salvage of succulents and cacti. It is misleading to include these in the same paragraph.

11c

Overall, we find the document to be a much better product than the preliminary DEIS with the exception of the above comments. The scope of analysis addresses all issues necessary for the Corps to make a permit decision after issuance of the FEIS.

We appreciate the opportunity to comment on this document and request that our comments are incorporated into the FEIS. If you have questions, please contact me at (520) 670-5021.

Sincerely,

Marjorie E. Blaine

Marjorie E. Blaine
Senior Project Manager
Arizona Section, Regulatory Branch



FS - 12

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, CA 94105-3901

MAY 16 1997

Charles R. Bazan
Forest Supervisor
Tonto National Forest
2324 E. McDowell Rd
Phoenix, Arizona 85006

Denise P. Meredith
State Director
Bureau of Land Management
Phoenix Field District
2015 W. Deer Valley Rd
Phoenix, Arizona 85027

Dear Mr. Bazan and Ms. Meredith:

The U S Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for the Cyprus Miami Leach Facility Expansion Project, Gila County, Arizona. Our comments are provided pursuant to the National Environmental Policy Act (NEPA), the Council on Environmental Quality's NEPA Implementation Regulations at 40 CFR 1500-1508, Clean Air Act Section 309, EPA's oversight of the conformity analysis under Section 176(c) of the Clean Air Act as administered by the Arizona Department of Environmental Quality, EPA's oversight of the Clean Water Act National Pollutant Discharge Elimination System (NPDES) permit as delegated pursuant Clean Water Act Section 402 to the Arizona Department of Environmental Quality, and EPA's oversight of the Corps of Engineer's Clean Water Act Section 404 permitting process pursuant to the EPA's 404(b)(1) Guidelines.

Cyprus Miami Mining Corporation proposes to expand its existing mine in order to support continued copper recovery operations. The proposed action would approve three new leach facilities and a new waste rock disposal area on both private and public lands. The proposed expansion would disturb 770 acres of public lands and would extend the life of the mine for about 16 to 20 years.

EPA has three primary concerns with the proposed action: 1) a Clean Air Act conformity analysis appears to be needed as the preferred alternative would generate an increase of over 100 tons per year of a criteria pollutant, 2) ground water monitoring below the leach facilities should be specified, and financial assurance for the contingency of collecting and managing mine leachates should be developed as part of the bonding obligation; and 3) the proposed action should be modified in order to become the least environmentally damaging practicable alternative to meet the 404(b)(1) Guidelines.

Responses to detailed comments from the EPA are provided on the pages following the cover letter.


We have assembled a team of EPA staff to evaluate this EIS in our San Francisco and Denver regional offices. These team members are:

Staff Name	Team Function	Position	Phone
Jeanne Gesebracht	Team leader	Env. Scientist	415/744-1576
John Hillebrand	Water, facilities design	Geologist	415/744-1890
Weston Wilson	NEPA compliance	Env. Engr.	303/312-6562
Paul Osborne	Ground water analysis	Hydrogeologist	303/312-6125
Robert Edgar	Air Quality	Meteorologist	303/312-6669
Harriet Hill	Wetlands analysis	Life Scientist	415/744-1969

Please do not hesitate to call these individuals directly for further explanation or to provide clarification of these comments.

EPA has rated the DEIS for the Cyprus Miami Leach Facility Expansion Project as EO-2 -- Environmental Objections-Insufficient Information (see enclosed "Summary of Rating Definitions and Follow-Up Action." Our concerns regarding the proposed action are based on the need to perform a conformity analysis pursuant to the Clean Air Act, the lack of funded contingencies to show compliance with the Clean Water Act, and the need to modify the alternative to meet 404(b)(1) Guidelines. Further, EPA recommends that additional information be included in the Final Environmental Impact Statement (FEIS). Our detailed comments on the DEIS are attached.

We appreciated the opportunity to review this DEIS. Please send three copies of the FEIS to this office, mail code CMD-2, at the same time it is officially filed with our Washington, D.C., office. If you have any questions, please call me at (415) 744-1584 or any of the individuals of the review team listed above.

Sincerely,

David J. Farrell, Chief
Federal Activities Office

Enclosures.

- 1) EPA's detailed comments--6 pages
- 2) EPA June 10, 1997 comments on FN No. 954-0192-MB--2 pages.
- 3) Summary of Rating Definitions and Follow-Up Action.

cc: Elaine Suriano, EPA, Washington, D.C.
Cliff Rader, EPA, Washington, D.C.
Arizona Department of Environmental Quality, Phoenix
Marjorie Blaine, Corps of Engineers, Phoenix

SUMMARY OF RATING DEFINITIONS AND FOLLOW-UP ACTION

Environmental Impact of the Action

LO-Lack of Objections

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC-Environmental Concerns

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

EO-Environmental Objections

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU-Environmental Unacceptability

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of environmental quality, public health or welfare. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1- Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternative reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2- Insufficient Information

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussions should be included in the final EIS.

Category 3- Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From: EPA Manual 1640, "Policy and Procedures for the Review of Federal Actions Impacting the Environment."

RESPONSE TO FS LETTER 12

12a. The agencies believe that after considering many alternatives, LEDPA was selected. Alternative sites for facilities are directly upgradient of existing disturbance and are in washes (drainages) already truncated by open pits or other mine features. The eliminated alternatives include sites that are too small; have complex terrain requiring multiple solution collection areas; disturb more waters of the US; disturb more valuable habitat; and/or are too remote from the existing operations to be practical and economically viable.

The 404 permit requires mitigation for losses of jurisdictional waters. The Cyprus Miami mitigation plan proposes a 2:1 replacement for 404-jurisdictional washes and wetlands, and a 1:1 replacement for 404-jurisdictional man-made open water. However, there is some overlap between the riparian vegetation type (7-acres) and the jurisdictional washes (3.94 acres). Therefore, the 2:1 replacement ratio resulting in 8 acres of habitat replacement compensates for the 7 acres of riparian vegetation type.

12b. Cyprus Miami concurs that Alternative A is the best alternative and will modify the Plan of Operations to reflect the selection of Alternative A.

12c. Further information concerning the legal and technical feasibility for the Webster Lake site should be requested from ADEQ.

12d. • An in situ copper operation is defined as economic recovery of copper from undisturbed in-place rock. This separates it from operations, such as BHP's San Manuel and Miami East, which leach copper from ground previously fractured by block caving of old underground workings. Even though the leach solution may be injected into the caved area through wells, it is more similar to dump leaching in which permeability has been significantly increased by historic mining activities.

• In situ leaching in porphyry copper deposits is currently an unproven technology when applied to undisturbed in-place rock. We are not aware of a successful large-scale in situ operation as defined above. Cyprus Miami in situ development programs have not been successful when attempting to recover copper from rock not previously fractured by mining operations. Previous attempts have been shut down without progressing beyond the pilot stage, even though major efforts were made to develop successful in situ technology.

• The combined ASARCO-US Bureau of Mines pilot program west of Casa Grande is still considered experimental. We are unaware that any commercial project has yet been proposed there.

• The BHP Florence project is in planning stages but no commercial operation has yet occurred.

• BHP Miami East Operations injects leach solution into previously caved material and is not a true in situ operation as previously defined.

• Cyprus Miami has not developed in situ leaching technology for the Miami deposit. The vast majority of the leach material at Cyprus Miami is found in undisturbed rock. Therefore, it is not equivalent to the BHP Miami East project.

Detailed Comments by EPA on the Draft Environmental Impact Statement (DEIS) for the Cyprus Miami Leach Facility Expansion Project, Miami, Arizona

Water Quality

Compliance with 404(b)(1) Guidelines

EPA has reviewed the Public Notice (PN) issued by the Corps of Engineers for compliance with the Federal Guidelines promulgated under Section 404(b)(1) of the Clean Water Act. Our comments on the PN are enclosed. The applicant proposes to fill a total of 9.22 acres of waters of the U.S., including drainages (3.94 acres), man-made surface impoundments (5.22 acres) and wetlands (.06 acres). Cyprus would construct three new heap leach pads at the Oxhide, BL, and GMC sites, and an overburden deposit area at the Barney site. Diversion channels would be constructed around all of these facilities to avoid impacts to downstream portions of waters of the U.S.

We currently object to the issuance of this permit because we do not believe the proposed project is the least environmentally damaging practicable alternative, we believe the riparian habitat mitigation ratio is inadequate, and we do not have enough detailed information on the mitigation plan.

Under the 404(b)(1) Guidelines at 40 CFR 230.10(e), the applicant must demonstrate that the chosen alternative is the least environmentally damaging practicable alternative (LEDPA) to meet the project purpose. Under the Guidelines, a practicable alternative is one that is available and capable of being done given the constraints of cost, logistics and technology. It is important to note that simply because a less-damaging alternative is more costly or less convenient than the preferred alternative does not necessarily mean that it is impracticable.

The DEIS outlines under Alternative A - Modified Development Sequence a scheme that reverses the order of construction of the Oxhide and GMC leach facilities. This operational alternative would delay Oxhide site development (and the impacts to its resources) by seven years, or perhaps even avoid these impacts altogether and thereby not disturb sensitive wetlands and fishery resources at the Oxhide site. At a minimum, this delay could provide time for future improvements to solution control technology which could reduce impacts to resources at Oxhide. Under the best case scenario, the delay could allow for the substitution of a less damaging heap leaching site at the former Webster Lake drainage area, after a corrective action plan is carried out at this contaminated site. This would eliminate the need for any facility at Oxhide. EPA believes that Alternative A, not the proposed alternative in the PN and DEIS, is the LEDPA, and should be carried out in order to comply with the Guidelines.

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RESPONSE TO FS LETTER 12 (continued)

2

Section 2.7.5 needs additional information in detail as to why the schedule for events at Webster Lake are not compatible with the time frame for the expansion. The current schedule for the Webster Lake evaluation must be provided and, assuming Cyprus is in charge of the evaluation and implementation of corrective actions, what actions would be needed to meet the expansion schedule. Why are the Webster Lake sediments not compatible with the current design? And why could the sediments not be compacted, removed or modified? Additional comments are provided below

The alternatives analysis which eliminated the following two alternatives is insufficient for the reasons given below. In addition to the alternatives given, in-situ extraction of copper needs to be examined as an alternative to creating the types of facilities outlined in the DEIS. Since this technology would have such a positive effect on the environment by not producing the proposed structures, the exact reasoning for its elimination must be given.

In section 2.7.1 the reasons given are not enough to eliminate the Needles site: 1) The steep topography may be adequate for the volumes to be placed but since the volume of the Needles area is not given, the reader cannot determine this. 2) The fact that the needles site would be on private land is not relevant, nor is the fact that it is planned for other expansion which should then be part of this DEIS. 3) The growth medium could be removed before the waste rock is dumped since it has to be removed for the expansion of 22 Dump anyway.

We recommend that wetland mitigation be further addressed in the FEIS. The DEIS states that the detailed mitigation plan for creating the 8.0-acre "native bosque" is being developed in concert with your office. The plan should include detailed information on the hydrology and existing condition of this stretch of Pinal Creek, planting plans, and how the vegetation would be maintained and monitored. The condition of the riparian vegetation to be lost along the affected drainages should also be discussed in more detail. It appears that a mesquite bosque would not provide in-kind replacement for the affected habitat types including Fremont cottonwood, Gooding willow, and Arizona sycamore. What is the rationale for this out-of-kind replacement? The DEIS states that the plan provides a 2:1 mitigation replacement ratio for the lost wetlands and zero for the riparian wash habitat, but p. 4-39 of the DEIS indicates that seven acres of riparian community would be eliminated by the project. We believe that this proposed 1.14:1 replacement ratio for the riparian vegetation loss is inadequate, and should be increased to a minimum 2:1 ratio.

Clean Water Act Section 402

The proposed facility is to be designed and operated as a "no discharge" facility pursuant to Section 402 of the Clean Water Act. The DEIS does not establish how these conditions of "no-discharge" are to be monitored and assured. The FEIS should define the conceptual design of the ground water monitoring near the proposed and existing leach facilities, the monitored conditions that would trigger a contingency plan to intercept any leachate, and any necessary

- There are no established shafts, drifts, or cave draw points to use for the collection of solutions
- Heap leaching is a proven technology that optimizes the economic recovery of copper from mined and broken rock. Environmental controls are demonstrated and in wide use. In situ has not been demonstrated to be technically or economically viable for porphyry copper deposits.
- It is unrealistic and unreasonable to expect that Cyprus Miami could maintain current production rates of 150 million pounds per year using an undeveloped and unproven (technical, economic, environmental) operating process.
- If, in the future, in situ or other technologies are satisfactorily developed in a commercial manner, it is reasonably foreseeable that Cyprus Miami would investigate the application of those technologies.

12e. The volume of the Needles 1 alternative which stayed on private land was about 28 million tons. The site is too small and the slopes are too steep to develop a technically and economically viable pad. The Needles 2 footprint would result in a volume of 85 million tons and solutions draining in 3 directions, requiring 3 separate solution collection impoundments for a small amount of ore.

One of the goals of the alternatives analysis was to determine if a project which did not disturb public lands could be identified. For this reason, land ownership information was given for each of the alternatives.

12f. The COE has specifically requested that the mitigation plan for jurisdictional waters of the US including wetlands address only those waters that are jurisdictional to COE. However, there is some overlap between the riparian vegetation type and the jurisdictional washes. Therefore, the 2:1 replacement ratio resulting in 8 acres of habitat replacement compensates for the 7 acres of riparian vegetation type.

Of the 9.22 jurisdictional acres, only 0.06 acres are jurisdictional wetlands. The remainder of the acreage is open water from man-made impoundments (5.22 acres) and zero-riparian washes (3.94). See the mitigation plan in Appendix A for actual acres and replacement. This mesquite habitat is considered higher value than the upland vegetation along the dry washes in the project area.

In paragraph 4, the EPA letter states that zero replacement is planned for wash habitat. The commentor may have confused the term zero-riparian washes with zero mitigation. Zero-riparian washes means that the vegetation along the wash consists primarily of upland species that may appear more robust due to the occasional flows in response to precipitation. In fact, a 2:1 replacement of washes and wetlands is proposed. (3.94 acres of washes + 0.06 acres of wetlands = 4.00 acres x 2 = 8 acres.) The mitigation plan (Appendix A) includes the information requested including: existing hydrology, planting plans, and monitoring plans.

12g. Details concerning monitoring of the leach facilities such as points of compliance, system performance, and contingency plans are contained in the Aquifer Protection Permit (APP) Application, Volume IV, Appendix J: Monitoring Plan and Development of Action Leakage Rates and Response Levels. The APP has not been finalized and granted by the Arizona Department of Environmental Quality (ADEQ).

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RESPONSE TO FS LETTER 12 (continued)

3

financial assurance needed to construct and operate such a contingency plan. We recommend the following steps be completed in order to evaluate the feasibility of the proposed water quality environmental controls:

- 1) Establish the CWA performance standards and points of compliance.
- 2) Determine leachate source loadings by quantifying flow and concentrations of constituents of concern for various climatic conditions including at a minimum, seasonal variations, wet year flow, and dry year flow.
- 3) Define the effectiveness of each means of leachate control and compare this to the CWA performance standards.
- 4) Evaluate the feasibility of maintaining standards compliance, such as the capture efficiency of the proposed leachate control.
- 5) Develop contingencies to ensure system performance.
- 6) Provide financial assurance for implementing feasible controls to maintain compliance with standards; including facility maintenance, infrastructure costs, replacement, and contingencies.

Section 2.4.2.1. The section for the leach pad site preparation indicates there will be underdrains in all major drainages. These drains would also be used for leach collection. We are concerned that this collection system would only be located in that portion of the leach pad built over an old drainage. The document does not provide information on the spacing of the collection lines. If the collector lines are to be utilized for leach collection, coverage must be adequate. The applicant does not propose to place any low permeability material on the bedrock or "firm native soil" which underlies the collection drain. This creates a potential pathway for leach fluid to bypass the leak collection system and move down gradient towards the site boundary. EPA recommends that where the underdrains are to be placed on fill, that the top of the fill be covered with low permeability material. The applicant should propose some monitoring wells down gradient of the facilities to detect any bypass of the system.

Section 2.4.2.3. The design of the leach solution collection reservoir calls for a double liner in the primary operating portion of the pond. These liners, however, are only separated by a geonet which would make it easier for both liners to be breached at the same time. It also might make it difficult to collect leaks. We suggest a drainage layer be placed between the two liners, such as six inches of gravel, which would reduce the potential for the liners being breached at the same time. This drainage layer will be useful for the collection and capture of any leachate that should be present.

The ADEQ Project Officer for the Cyprus Miami Mine Expansion is Jack Kepper (602) 207-4621. Considering that the APP is pending, the BLM and the Forest Service believe that the discussion in the DEIS concerning the "zero discharge" design of the heap leach facilities is adequate for the general public for which the EIS is intended. Page 4-23, Section 4.2.3.2.1., item 1, first bullet, summarizes in general terms how the leach facilities will operate as "no discharge" sites; Section 2.4.2 describes this in more detail. Financial assurance is provided under the APP program.

12h. These issues have been thoroughly evaluated and are supported in the State of Arizona Aquifer Protection Permit Application (APP), Volume IV, Section 3.2.2.2 (page 3-20, 21) and approval is pending by ADEQ. The primary function of the foundation underdrain system is to prevent the development of ore pressures and a piezometric surface within the foundation of the heap leach pad. The underdrains consist of slotted pipes encapsulated by drain rock, which have orders of magnitude higher transmissivity than the bedrock or compacted subgrade. Compaction of fill or native soils will be required to provide a positive grade to convey the captured flows. The downgradient limits of the underdrain system must pass through the foundation of the leach solution collection reservoir, which is excavated entirely in bedrock. As a result, any potential flows which bypass the drains and flow along the fill/bedrock interface would be collected by the underdrains in this area.

Predicted flows are from seeps and seepage through the upgradient embankments. As a result, the primary underdrains are located to convey these known sources. Secondary underdrains will have been located in all major drainages, seeps, and historic working locations where either evidence exists of historic discharge or where it is considered technically feasible for discharge to occur.

The impacts of potential seepage through the prescriptive BADCT liner system were evaluated in the APP application. This issue is documented in detail in the Discharge Impact Area Assessment and Demonstration with Aquifer Water Quality Standards in Volume III, Part B and in the BADCT Aquifer Loading in Volume IV, Appendix I. Both of these evaluations conservatively ignored the beneficial impact of the underdrain system. In addition, two point-of-compliance monitoring wells are located immediately downgradient of the facility.

12i. The liner system for the leach solution collection reservoir meets prescriptive BADCT design criteria for ADEQ, and is widely recognized as an industry standard design. Potential seepage through the LCRR would flow through the geonet to the LCRR sump for monitoring. Monitoring alert levels, response criteria and contingency plans are documented in Volume IV, Appendix J as Section J-2.4.2 of the APP application. Should a breach occur large enough to breach both liners, the leakage would be detected and the appropriate response criteria and contingency plan would be implemented.

Placement of six inches of gravel, in lieu of a geonet specifically designed for the purpose of conveying LCRR solutions, would be an inferior design due to the decreased transmissivity and the significantly greater probability of damage during construction from placement of the gravel. In addition, the potential for a translational failure along the gravel/geonet interface would then exist.

12i

RESPONSE TO FS LETTER 12 (continued)

Section 2.4.3.1. This section should discuss the planned monitoring and contingency plans for detecting and dealing with leaks in the HDPE pipelines for transporting the leach solution from the collection ponds to the extraction plant. This section should also state the expected 100-year/24-hour, probable maximum precipitation (PMP) and normal operating capacities of the solution containment and stormwater diversion structures.

12j

Section 4.2.3.2.1. This section should provide a discussion on the conceptual design of the ground water monitoring near the leach piles, such as the number of wells, the constituents to be analyzed, and the frequency of sampling. How are these facilities bonded and what financial assurance do the lead agencies have to provide for such monitoring and contingencies? The assumption that the facility would remain a "zero discharge" facility must be documented and financial assurance provided

12k

Section 3.2.6. This section indicates that waste rock and tailings with acid generating material could be flagged in the field and mixed with neutralizing material or isolated in a waste rock dump. We are concerned about the ability of the applicant to carry out such a plan at a large facility like this operation. The plan should specify how the waste is flagged, a description of the sampling procedure and range of concentrations associated with the alleged neutralizing material, and how the operators are trained to respond to the those flagged conditions. It is noted that the estimated overall buffering capacity is approximately 15 times greater than the acid generating potential, which indicates there is some acid generation potential. Tailings material with ABA testing that indicated a potential to generate acid must not be used for a subbase for the leach facilities. This would run counter to the purpose of the liner in the first place. The FEIS should indicate how this could be done in a sound manner.

12m

Section 3.3.1.3. Because all of the groundwater beneath the facilities exceeds groundwater standards for radioactivity, what will be done with the groundwater pumped to dewater the facility related to the expansion of the mine? What is currently done at the existing facility with the contaminated groundwater? How will the additional dewatering effect nearby springs?

12n

Section 2.4.2.4., 4.2.2.1. The static and seismic factors of safety should be stated and if close to 1.0, justified. In addition, each solution pond that could drain to surface waters needs to have independent backup power at each facility if they do not drain to a holding area by gravity.

12o

Section 2.4.2.2. The target permeability of the 'low permeability tailings material' must be specified. The required permeability at a nearby facility is 1×10^{-4} cm/sec. The crushed ore that will serve as a drainage layer and placed over the liner must not puncture it. A maximum size of 1/2 inch has been used at similar facilities

12p

Section 4.2.3.2.1. Several issues regarding the modeling should be addressed in the FEIS:

12q

- a. What is the basis for the assumption that there is only two feet of head on the liner? The ore will be placed in 15-foot lifts. We would expect a head of more than two feet once

12j. Details concerning monitoring and contingency plans for detecting and dealing with leaks in the HDPE pipelines are contained in the Aquifer Protection Permit (APP) application, Volume 4, Appendix J-1, Section J-2.1. The design criteria for solution containment and diversions all meet or exceed ADEQ and ADWR design criteria. The APP has not yet been finalized and granted by the ADEQ. The ADEQ Project Officer for the Cyprus Miami Mine Expansion is Jack Kepper (602) 207-4621.

12k. The locations and details concerning the groundwater monitoring wells were not available at the time of the April 1997 publication of the DEIS. The second bullet under item 1 of page 4-23 has been modified to read:

"Groundwater quality will be monitored just down-gradient of each leach facility. The Aquifer Protection Permit (APP) application, not yet granted by the ADEQ, proposes one well down-gradient of the BL facility, four wells down-gradient of the GMC facility, and two wells down-gradient of the Oxhide facility. The wells will be monitored quarterly."

Further, refer to the monitoring program in the APP Application, Volume IV, Appendix J.

12l. Both BLM and the Forest Service will require a bond from Cyprus Miami to ensure full reclamation of public lands. The adequacy of the bond will be reviewed on a regular basis throughout the project and adjusted if necessary.

12m. The Cyprus Miami waste rock characterization and handling program will include QA/QC procedures which will ensure appropriate flagging of various material and use of only non-acid-generating Gila conglomerate material for foundations of the leach facilities.

Extensive waste characterization has been conducted on the Cyprus Miami overburden materials as part of the expansion APP application and the recently completed Cyprus Miami area wide APP application. The result of this work has determined that the overall behavior of the Cyprus Miami waste rock is inert, thereby being exempt from the ADEQ APP requirements.

As part of the waste characterization work completed for the expansion facilities, pit development maps and exploration hole logs were reviewed, and representative geologic cross sections were identified to evaluate each of the pushbacks. Cross sections were developed which summarized geology and mineralogical information such as type and quantity of sulfide minerals. Based on review of the cross sections, geologic logs for selected core holes were examined to identify appropriate sampling intervals and to further refine the geologic model. Core samples were then selected for geochemical characterization. Overburden generated as a result of the planned expansion activities are predicted to have an acid neutralization potential 15 times greater than the acid generating potential, based upon the relative percentages of each rock type. Additional information is available in the Materials Characterization and Handling Plan by Cyprus Miami (Golder Associates Inc. 1995f).

As discussed above, it has been determined that the overburden scheduled for the Barney Overburden Facility is inert. Cyprus Miami has agreed to an operational monitoring program to confirm and

RESPONSE TO FS LETTER 12 (continued)

5

leaching has been underway for some time. The pile could reach complete or near saturation within the central portion of the pile. This could result in much higher head conditions than two feet. The head assumption should be based on the conditions that are predicted for the total height of the pile, not only a single ore lift of 15 feet. What head exists for the other operating leach pad facilities at the same location? We recommend that the model should be used to estimate a range of conditions such as those under a completely saturated pile condition.

- b. The modeled travel time for chloride at the BL facility is estimated at 38 years. How does this compare with the actual experience in and around the sites over the last 20 years? Travel times from the Oxhide and Bluebird facilities for ground water contaminants would seem to be much shorter.

Section 4.2.3.2.2. This Section indicates that the waste rock in the Barney pile will be Gila conglomerate. We suggest the FEIS provide for an estimate of the tonnages of various rock types. A geologic section of the pits showing the waste rock would be helpful.

Air Quality

Section 4.2.1.2 Page 4-17, Conformity Determination. There appears to be a problem in the determination of conformity for PM₁₀ and possibly SO₂. Table 3-5a on page 3-10 shows that the most recent controlled fugitive PM₁₀ emissions in 1995 were 2004.91 tons. Table 4.2 shows that the "No Action" conformity analysis is based on the projected maximum emissions for "No Action," which occurs in 2000 (i.e., 3,777 tons/yr). The third paragraph on page 4-70 states that "the maximum PM₁₀ emissions in 2007 (3636.9 tons/year) would be 140 tons per year less than the maximum emissions year of the No Action Alternative, based on 70 percent control efficiency." In contrast, 40 CFR 93.153 (g)(2) states that "The Federal agency must provide documentation that the total of direct and indirect emission from such future actions would be below the emission rates for a conformity determination that are established in paragraph (b) of this section, based, for example, on similar actions taken over recent years." Therefore, Alternative A (preferred option) emissions should be compared to the most recent emissions (average of 1995 and 1996, if 1996 data are available) From Table 3-5a using 1995 data, the net increase in PM₁₀ emissions by implementing the preferred option is 3636.9 - 2004.91 = 1,631.99 tons/yr, which will require a conformity analysis for PM₁₀. For SO₂, the requirement of a conformity analysis is uncertain since a comprehensive SO₂ emissions inventory is not presented in Chapter 3 (Affected Environment) The FEIS should address conformity for both PM₁₀ and SO₂.

Section 4.1.1.1.1 Page 4-4, second paragraph. "A conservative level of 70 percent control of PM₁₀ emissions is assumed by use of water and dust suppressants." We recommend that the percent control not be assumed, but be calculated using EPA particle emission percent control efficiency calculations as found in EPA-450/3-88-008, "Control of Open Fugitive Dust Sources."

document that materials meet the operational definition of "inert" by sampling and conducting acid-base accounting and EPA Method 1312 testing at a frequency of one sample per million tons. Results from the operational monitoring program will be reported to ADEQ on a quarterly basis.

While the ABA results for samples of historic tailings materials indicate a potential for acid generation, in situ weathering may have diminished this potential. The leachability testing indicates a relatively low mobility for most metals. Because these materials will be utilized as a cushion layer between the rockfill foundation and the synthetic liner, potential mobilization of metals and acidity, albeit low to begin with, should be insignificant. In addition, the tailings soil liner is only one foot thick and is underlain by overburden rock fill up to sixty feet thick, which has a significant acid neutralization capacity. The geomembrane liner will also prevent water from contacting the tailings layer.

12n. Naturally-occurring radionuclide concentrations in groundwater does not constitute contamination, per se. Pit slope dewatering waters are used in the industrial mine circuit and as makeup water in other circuits.

It is important to note that all of the unimpacted groundwater beneath the proposed site does not exceed aquifer water quality standards (AWQS) for radionuclides. A few exceedances of adjusted gross alpha and radium 226 + radium 228 occurred, which reflect natural background conditions in the area. No standards exist for uranium and gross beta. Second, water volumes from dewatering operations downgradient of these facilities is not expected to increase as a result of the expansion and is used in the industrial circuit and as makeup water in other circuits, per normal operations.

As stated on page 3-30 of the DEIS, the groundwater beneath the proposed leach facilities is up-gradient from existing mining facilities and probably represents naturally-occurring background conditions. As stated on page 4-22 of the DEIS, "Groundwater pumping near the leaching facilities will not occur, nor are there any plans for new water supply wells." In addition, the mine expansion is not expected to increase dewatering operations down-gradient of the proposed leach facilities. Since additional dewatering will not take place either at the proposed leach facilities or at existing down-gradient facilities, springs will be unaffected.

The permeability of the bedrock formations at the site is low, averaging about 1×10^{-6} cms. This results in a steep potentiometric surface in the vicinity of the pit and small, steep cones of depression at pit slope dewatering wells. The effect of this existing activity on springs, therefore, can be considered negligible. Since the pit is already dewatered on an as-needed basis, there should be no additional incremental effects. See also the second paragraph of response 12h.

12o. Stability information is provided in the APP application in Volume IV, Sections 3.2, 3.3, 3.4 and Appendix B-1. Each of the facilities have static and pseudo-static factors of safety well in excess of 1.3 and 1.0, respectively, which are the regulatory requirements. As stated in response 12a, facility sites are in drainages already intercepted by mine facilities and no drainage to surface waters can occur off-site.

12p. The specifications for the soil liner and drainage layer are included in Appendix L, Volume IV of the APP application.

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RESPONSE TO FS LETTER 12 (continued)

6

Cumulative Impacts

Section 4.0 Page 4-1, last paragraph. "If there is no cumulative impact discussion, then the reader can assume there are no cumulative impacts." We recommend that the potential for cumulative impacts be discussed in each section as it relates to the appropriate threshold of environmental compliance performance standards.

12w

12q. The methodology and calculation used to compute head on the liner follow the protocol developed by the EPA. This issue is documented in the APP application, Volume IV, Appendices Set 1 of 2, Appendix B-5. Since the transmissivity is orders of magnitude higher than that of the ore, the height of the ore heap has no impact on the liner head calculations. The third bullet in Section 2.4.2.2, of the DEIS, Leach Pad Liner Design, has been modified to read:

- "A solution collection piping network will drain the percolating leach solution from the leach pad. The spacing between the solution collection piping network, as well as the hydraulic conductivities of the pad and drainage layer, were designed using the "EPA Mound Model" so that the hydraulic head above the geomembrane liner would be less than two feet. This modeling is described in Volume 4, Appendix B-5 of the Aquifer Protection Permit."

The third bullet of item 3 in Section 4.2.3.2.1 of the DEIS, has been modified to read:

- "The hydraulic head on top of the geomembrane liner never exceeds two feet. As described in Section 2.4.2.2, the spacing between the solution collection piping network, as well as the hydraulic conductivities of the pad and drainage layer, were designed so that the hydraulic head above the geomembrane liner would be less than two feet."

12r. There is no modeling of chloride in the vicinity of the Cyprus Miami Mine in geological materials similar to that of the three proposed heap leach sites. The locations of the different geological materials are shown in Figure 3-3 in the DEIS.

12s. A table of various rock types and tonnages has been added; see page 2-12 of this FEIS. The only rock type which will be deposited at the Barney Overburden site is Gila Conglomerate. The capacity of this site is approximately 74 million tons.

12t. This section of the Conformity Rule (40 CFR 93.153 (g)(2)) is not strictly not technically applicable to the type of action which is the subject of the NEPA analysis. The DEIS is not establishing new categorical activities which are presumed to conform but rather proposing a specific action. This analysis clearly shows that the Preferred Alternative will result in reductions in emissions as compared to the No Action Alternative and are clearly de minimis.

12u. Please see Table 4-3 on page 2-10 of the FEIS which shows the SO₂ emissions for the comparison of maximum emissions from the No Action Alternative and the Preferred Alternative which shows a reduction in SO₂ and another clear case of a de minimis action.

12v. In EPA-450/3-88-008 Control of Open Fugitive Dust Sources, Section 3.3.3.2 states "Repeated use of chemical dust suppressants tend, over time, to form fairly impervious surfaces on unpaved roads." This factor in addition to the fact that the primary traffic on the roads is very heavy haul trucks, which coupled with a low silt content of the road surface results in a very compacted road surface. Little to no material is available for dispersion when sampled using the standard sweeping technique found in the AP-42. Using the Section 5.3.1.1 control efficiency equation $C = 100 - (0.8 p d t/f)$ where C is the control efficiency, p is the average pan evaporation rate in mm/hr, d is the traffic rate, t is the time between suppressant applications, and f is the application rate, the calculated control efficiency is 60%.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, CA 94105-3901

JUN 10 1987

Colonel Robert L. Davis
U.S. Army Corps of Engineers
ATTENTION: Regulatory Branch (954-0192-MB)
5205 E. Comanche Street
Davis Monthan AFB, Arizona 85707

Re: Public Notice (PN) No. 954-0192-MB, May 11, 1997, Cyprus Miami Mining Corporation, Cyprus Miami Copper Mine Expansion, Miami, Gila County, Arizona

Dear Colonel Davis:

The Environmental Protection Agency (EPA) has reviewed the above PN for compliance with the Federal Guidelines promulgated under Section 404(b)(1) of the Clean Water Act (referred to below as the "Guidelines"). We also have reviewed the supporting information in the Draft Environmental Impact Statement (DEIS). The applicant, Cyprus Miami Mining Corporation (CMMC) proposes to fill a total of 9.22 acres of waters of the U.S., including drainages (3.94 acres), man-made surface impoundments (5.22 acres) and wetlands (.06 acres). CMMC would construct three new heap leach pads at the Oxhide, BL, and GMC sites, and an overburden deposit area at the Barney site. Diversion channels would be constructed around all of these facilities to avoid impacts to downstream portions the waters of the U.S.

We currently object to the issuance of this permit because we do not believe the proposed project is the least environmentally damaging practicable alternative, we believe the riparian habitat mitigation ratio is inadequate, and we do not have enough detailed information on the mitigation plan.

L. Alternatives [40 Code of Federal Regulations Section 230.10(a)]

Under the Guidelines, CMMC must demonstrate that the chosen alternative is the least environmentally damaging practicable alternative (LEDPA) to meet the project purpose. Under the Guidelines, a practicable alternative is one that is available and capable of being done given the constraints of cost, logistics and technology. It is important to note that simply because a less-damaging alternative is more costly or less convenient than the preferred alternative does not necessarily mean that it is impracticable.

The DEIS outlines under "Alternative A - Modified Development Sequence" a scheme that reverses the order of construction of the Oxhide and GMC leach facilities. This operational alternative would delay Oxhide site development (and impacts to its resources) by seven years, or perhaps even avoid altogether disturbing sensitive wetlands and fishery resources at the Oxhide

RESPONSE TO FS LETTER 12 (continued)

Specifically, the equation states $60\% - 100 - \{0.8 * 22 * 0.4655 * (2/0.41)\}$. In addition, the document also provides for accounting of measurable precipitation days ($0.01''$ precipitation or greater) which for this area is 50 days per year. The effect of this 50 days is to lower emissions by 14% which is the same as increasing the control efficiency by 16% [$1/0.86 - 1.16$ and $1/16 * 60$] and is approximately equal to a 70% control efficiency when combined with the previous suppressant based control efficiency. In conclusion, the value of 70% for the control efficiency of water and dust suppressants on the Cyprus Miami unpaved roads is justifiable and conservative in light of the above calculations and the statements about unpaved roads found in EPA guidance documents.

12w. The agencies performed the evaluations in each resource section related to appropriate thresholds of environmental compliance performance standards. If there were no cumulative effects identified, the agencies chose to shorten the document by not providing any discussion, rather than repeating the statement that no cumulative impacts were identified.

12x. The agencies believe that after considering many alternatives, LEDPA was selected. Sites are directly upgradient of existing disturbance and are in washes already truncated by open pits or other mine features. The eliminated alternatives include areas that are too small; have complex terrain requiring multiple solution collection areas; disturb more waters of the US; disturb more valuable habitat; and/or are too remote from the existing operations to be practical and economically viable.

Cyprus Miami has agreed that Alternative A is LEDPA and will revise the Plan of Operations accordingly.

12y. A conceptual mitigation plan was completed for the DEIS. A detailed mitigation plan has been prepared and is appended to this FEIS as Appendix A. The plan follows the HMMP outline and gives detailed information about the proposed mitigation including how it would be implemented and monitored. This information has been provided to COE, BLM and Forest Service for review prior to the publishing of the FEIS.

12z. Cyprus Miami has prepared a detailed mitigation plan (see Appendix A). This plan provides or will be modified to provide the information requested including existing conditions, planting plans, irrigation plans, system maintenance, and monitoring.

This plan addresses mitigation for impacts to the waters of the US. The jurisdictional waters are: 5.22 acres of man-made open water, 3.94 acres of dry washes, and 0.06 acres of wetlands. The washes are typical ephemeral washes found in the southwest. Most contain upland species that may appear more robust due to moisture available from flows in response to precipitation. In addition to the jurisdictional areas, the vegetation baseline study identified 7 acres of riparian vegetation type that would be disturbed. Because there is some overlap between the jurisdictional areas and the riparian vegetation type, the plan would mitigate for both. In order to develop a mitigation plan with a high probability of success that would create high value habitat, Cyprus Miami evaluated options both on and off site. The Pinal Sunflower Ranch mitigation would create high value habitat in an area with an existing water source.

12x

RESPONSE TO FS LETTER 12 (continued)

-2-

site. At minimum, this delay could result in future improvements to solution control technology which could reduce impacts to resources at Orbidle. Under the "best case scenario," the delay could allow for the substitution of a less damaging heap leaching site at the former Webster Lake drainage area, after a corrective action plan is carried out at this contaminated site. This would eliminate the need for any facility at Orbidle. EPA believes that Alternative A, not the proposed alternative in the PN and DEIS, is the LEDPA, and must be carried out in order to comply with the Guidelines.

II. Mitigation [40 CFR 230.10(d)]

The Guidelines require that applicants offset unavoidable losses to aquatic habitat. We have reviewed the mitigation plan as presented on pp. 4-33 to 4-34 of the DEIS. We find that this cursory description does not provide enough information for us to determine whether the project would comply with Section 404 of the Clean Water Act [40 CFR 230.12(a)(3)(v)]. We recommend that CMMC provide the following information for EPA and wildlife resource agency review before the permit is issued:

1. The detailed mitigation plan for the 8.0 acre creation of a "native bosque." The DEIS states that this plan is being developed in concert with your office. The plan should include detailed information on the hydrology and existing condition of this stretch of Pinal Creek, planting plans, and how the vegetation would be maintained and monitored. The condition of the riparian vegetation to be lost along the impacted drainages should also be discussed in more detail. It appears that a mesquite bosque would not provide in-kind replacement for the impacted habitat types including Fremont cottonwood, Goodding willow, and Arizona sycamore. What is the rationale for this out-of-kind replacement?

The DEIS states that the plan provides a 2:1 mitigation replacement ratio for the lost wetlands and zero-riparian wash habitat, but p. 4-39 of the DEIS indicates that 7 acres of riparian community would be eliminated by the project. We believe that this proposed 1:1 replacement ratio for the riparian vegetation loss is inadequate, and should indeed be increased to a minimum 2:1 ratio.

2. Additional information on the proposed diversion channels and the Webster Gulch and Little Pinto Canyon impoundments. For example, how will the diversion channels be designed to resemble the natural washes? (p. 2-13 of the DEIS only states their capacity, and that they will be V-shaped and sloped at a 1.5:1 and 3:1 configuration.) How often would the two reservoirs at Webster Gulch and Little Pinto Canyon be dry? How would this drying affect the extent and health of the perimeter wetlands vegetation?

3. Information on how the water provided by the 17 springs, seeps and ponds that would be lost to the project will be made available elsewhere for wildlife.

12aa

A 404 permit requires mitigation for losses of jurisdictional waters (including wetlands). The Cyprus Miami mitigation plan proposes a 2:1 replacement for 404-jurisdictional washes and wetlands, and a 1:1 replacement for 404-jurisdictional man-made open water.

Of the 9.22 jurisdictional acres, only 0.06 acres are jurisdictional wetlands. The remainder of the acreage is open water from man-made impoundments (5.22 acres) and dry washes (3.94). See the mitigation plan (Appendix A) for the acres of replacement habitat and species. This mesquite habitat is considered higher value than the upland vegetation along the dry washes in the project area. Incidentally, under drought conditions, the Bohme reservoir (3.69 acres of open water) is typically dry.

Xero-riparian washes means that the vegetation along the wash consists primarily of upland species that may appear more robust due to the occasional flows in response to precipitation. In fact, a 2:1 replacement of washes and wetlands is proposed. (3.94 acres of washes + 0.06 acres of wetlands = 4.00 acres x 2 = 8 acres.)

12bb

Diversion channels. Diversions are designed to convey flow and sediment associated with the design storm event. In order to prevent runoff from eroding the leach pads and to insure continuous separation of storm water and process solutions, these channels will be periodically cleaned out and maintained. Vegetation planting is not practical and is not planned for these facilities. The agencies believe that the diversions, as designed, afford optimal environmental protection.

Impoundments. Webster Gulch impoundment is expected to contain water about 92% of the time. Little Pinto Impoundment is expected to contain water about 7% of the time. Based on conditions at man-made impoundments elsewhere on the property, it is expected that riparian vegetation will become established at Webster and Little Pinto Impoundments. Plantings of willows and cottonwoods are planned and establishment will be observed during the project. If these plants are successful, Cyprus Miami may propose "banking" this mitigation. However, because the water levels may fluctuate, at this time, the ordinary high water level is not known, Cyprus Miami decided to create additional mitigation where conditions are already known, variables can be controlled, and results can be predicted.

12cc. Open water should be available for wildlife at the Webster Impoundment and Little Pinto Impoundment.

12y

12z

12aa

12bb

12cc

-3-

Thank you for the opportunity to comment on this PN. If CMMC agrees to Alternative A as the proposed project, increases the riparian mitigation ratio, and provides the information we have requested on the mitigation plan, we will reexamine our objection to this project. Please contact Harriet Hill at (415) 744-1969 or me at (415) 744-1905 if you have any questions.

Sincerely,



Daniel A. Meer, Chief
Clean Water Act Compliance Office

cc. USFWS
ADEQ
AG&FD
Applicant

FS - 13



THE STATE OF ARIZONA

GAME & FISH DEPARTMENT

2221 West Greenway Road, Phoenix, Arizona 85023-4399 (602) 942-3000

RESPONSE TO FS LETTER 13

13a. Only native species will be used on lands administered by BLM and FS.

13b. Chapter 2 contains six separate sections that discuss only surface water diversion features and runoff control. The Forest Service and the BLM believe that this is adequate for the general public for which the EIS is written. Therefore, no changes to the EIS have been made.

Diversion channels are designed to convey flow and sediment from the design storm to prevent runoff and runoff from eroding the leach pads, and to insure the continuous separation of storm water and process solutions. The diversion channels are replacement for conveyance of water around the leach pads, but were not counted into the equation for habitat mitigation. During operations, the diversions will require periodic maintenance; therefore, vegetation plantings are not practical and are not planned for these facilities. The agencies believe that the diversions, as designed, afford optimal environmental protection. See also response 12bb.

Governor
Fds. Symposium
Commissioner
Chairman: Michael W. Gallegos, Flagstaff
Hate Guenab: T. C. ...
Fred Belmont, Tucson
M. Jean Hassell, Scottsdale
Nancy Johnson, Sun-Flag
Director
Diane L. Shroede
Deputy Director
Thomas W. Spalding

June 18, 1997

Mr. Paul Stewart
Tonto National Forest
2324 East McDowell Road
Phoenix, Arizona 85006
Ms. Shela McParlin
Bureau of Land Management
Arizona State Office (AZ-917)
222 North Central Avenue
Phoenix, Arizona 85004

Re: Draft Environmental Impact Statement (EIS) for Cyprus Miami Leach Facility Expansion Project.

Dear Mr. Stewart and Ms. McParlin:

The Arizona Game and Fish Department (Department) has reviewed the Draft EIS for Cyprus Miami Leach Facility Expansion Project, and the following comments concerning this document are provided for your consideration.

The proposed project will directly impact approximately 1300 acres of Forest Service, Bureau of Land Management, and privately owned lands. This area contains moderate to high quality upland and riparian habitat for a multitude of wildlife species. Although proposed reclamation may reduce impacts to habitat values after the cessation of mining operations, temporal losses for the life of the mine (20 years) may be significant. In addition, the Department recommends only native species be used in reclamation efforts (page 2-28).

The Department recommends more detailed descriptions of the surface water diversion features be included in the Final EIS. These diversion features should be designed and constructed to replace the functions and values of natural drainages, which includes allowing riparian or xero-riparian vegetation to become established in the drainages. In addition, the gradient and velocity should be designed to be similar to those of the natural drainages prior to disturbance to aid in the natural regeneration of riparian vegetation. Diversion channels should not function as service roads if they are to be considered as mitigation for impacts to washes (page 4-33).

13a

13b

Mr. Stewart & Ms. McFarlin
June 18, 1997
2

RESPONSE TO FS LETTER 13 (continued)

13c. The agencies believe that the proposed mitigation plan provides compensation for losses of habitat in an area where there is a high probability of success. The replacement ratio and habitat values are deemed appropriate.

13c

The Department seeks to compensate for habitat losses at a 100% level where feasible. Our goal for perennial streams and riparian habitats associated with perennial waters is to achieve no loss of existing in-kind habitat values (Resource Category I). For riparian habitats not associated with perennial waters, our goal is no net loss of existing habitat value, while minimizing loss of in-kind value (Resource Category II, Department Operating Manual Policy I2.3). Our agency recognizes riparian habitats as areas of critical environmental importance to wildlife and fisheries. Many of the special status species in Arizona are riparian obligates which would be negatively affected by land management practices that degrade riparian habitats. Riparian areas are also used by game and nongame species for cover and forage, and frequently serve as movement corridors.

13d. The agencies agree that the mitigation plan was not described in detail in the DEIS. The detailed mitigation plan is now complete and provides the specifics of the plan (Appendix A to this FEIS). The mitigation plan mitigates for waters of the US. There is some overlap between riparian vegetation type and waters of the US; therefore, the mitigation plan also compensates for riparian vegetation type. Cyprus Miami evaluated several areas for suitable mitigation sites.

Cyprus Miami's Sunflower Ranch on Pinal Creek was selected because:

- it possesses favorable conditions for mitigation success including a reliable source of water with suitable water quality;
- there is potential to create high quality wildlife habitat;
- the site is near the project area.

13d

The proposed revegetation and restoration of an 8 acre area adjacent to Pinal Creek is not described in sufficient detail to evaluate the adequacy of the mitigation relative to the replacement of existing habitat values. In general, the mesquite bosque habitat that would be developed is of lower value than the Fremont cottonwood, Gooding willow, and Arizona sycamore/Fremont cottonwood habitats expected to be lost (page 4-84). We recommend these habitats be replaced by revegetation and restoration with in-kind habitat. While recognizing the tamarisk riparian vegetative community is not a native community type, it has value as wildlife habitat. We recommend this habitat be replaced with mesquite or higher value habitat. In addition, the Department requests the Final EIS provide a map of all riparian vegetation located in the study area which also identifies the location of riparian areas expected to be negatively impacted.

Figure 3-12 in the DEIS shows where the riparian vegetation communities are located. The riparian vegetation areas that will be disturbed are those shown inside of the facility footprints on this figure. Jurisdictional waters are shown on Figure 3-10 in the DEIS.

13e. Webster/BL. The riparian areas within the footprint of the BL leach pad and upgradient of the Webster impoundment were calculated into the acreage of lost Waters of the US. There is no riparian vegetation type above the Webster impoundment.

Little Pinto/BL. The riparian areas within the maximum surface area of the Little Pinto impoundment are included in the calculations of lost Waters of the US. The maximum potential surface area of the Little Pinto impoundment (following the dam crest elevation upgradient along the contour) is 36 acres. However, the probable maximum pool size (based on rainfall and evaporation modeling) is not expected to exceed 2 acres. The model indicates that the majority of the time there would be no water in Little Pinto impoundment. The attached figure (Figure 3-12a in this FEIS) shows the maximum expected pool size and the riparian vegetation types. It is expected that enhancement of this area will occur due to additional available moisture.

13e

Proposed plans include the construction of two small dams in Webster Gulch and Little Pinto Canyon. While the dams may lead to the development of wetland habitat, the Final EIS should determine how the storage of water behind the dams will affect the existing riparian vegetation in Little Pinto Canyon and Vigor of Life Springs area. This alteration of the hydrologic regime may impact the mature riparian hardwood species present including cottonwoods and sycamores. These riparian habitats are of high value to both resident wildlife and neotropical migratory birds. These factors should be discussed in more detail in the Final EIS.

The Vigor of Life spring would be covered by the BL leach facility. Water from the spring would be routed through piping to connect with the underdrain system on the leach facility foundation. Water from the spring would be captured in underdrain sumps and be used in the leaching process or be discharged in accordance with applicable regulations.

13f

The Department recommends the mitigation plan enhancement proposal required by the Army Corps of Engineers, be fully described in the Final EIS. We recommend inclusion of success criteria for the revegetation and restoration project (minimum of 80% survival after five years) be monitored on a yearly basis. In addition to improvement and enhancement of riparian areas in the project vicinity, if additional mitigation measures are needed, we recommend consideration of livestock enclosures in impacted riparian areas and construction of alternative watering sources to replace those lost from project implementation.

13f. A final Habitat Mitigation and Monitoring Plan is provided in the Final EIS (see Appendix A). The plan includes vegetation success criteria.

Mr. Stewart & Ms. McFarlin
June 18, 1997

3

If the Department can be of further assistance, particularly in the review of proposed mitigation measures, please contact Regional Habitat Program Manager, Russell Haughey at (602) 981-9309. We appreciate the opportunity to comment on the Draft EIS and look forward to reviewing the Final EIS.

Sincerely,



James E. Burton, Chief
Habitat Branch

JEB:GEC:gc

cc: Sam Spiller, Field Supervisor, US Fish and Wildlife Service
James Romero, U.S. Environmental Protection Agency
Larry Widnar, District Ranger, Globe Ranger District, Tonto National Forest
Kelly Neal, Regional Supervisor, Region VI, Mesa

WMHB# 04-11-97(07)

FS - 16

People for the West
Southeast Arizona Chapter
PO Box 1985
Sierra Vista, AZ 85636

Paul Stewart, Project Manager
Tonto National Forest
2324 E McDowell Road
Phoenix, Arizona 85006

Dear Mr. Stewart,

Reference the Draft Environmental Impact Statement (DEIS) for Cyprus Miami Leach Facility Expansion Project, Miami, Arizona, April 1997.

Recommend Agencies Preferred Alternative A be selected. It has a net benefit to the air shed when compared either to No Action or Proposed Alternative.

The project is designed to meet or exceed the best available demonstrated control technology (BADCCT) that is required by the state of Arizona. The project has many environmental attributes including a composite liner system underlying the leach pads, double lined collection reservoirs and lead collection recovery system.

The project will be subject to stringent ground and surface water monitoring and a comprehensive closure and reclamation plan that will be guaranteed by a performance bond.

The project will generate a huge economic impact of 2.9 billion dollars, some of which goes to supporting local, state and federal governments.

The project will extend the life of the mine, sustain employment and preserve the local cultural heritage.

Sincerely

Rachel A. Thomas

Rachel A. Thomas, President

cc: Senator Jon Kyl
Senator John McCain
Az Senator Gus Arzberger
Az Representative Gail Griffin

RESPONSE TO FS LETTER 16

Thank you for your comments.



June 10, 1997

Received via FAX 6/10/97
Tomb NF
Cypus of FS-16

FS - 20

RESPONSE TO FS LETTER 20



Executive Office of the Chairman
WHITE MOUNTAIN APACHE TRIBE

RONNIE LUPF
CHAIRMAN

DATE	REVISIONS	INITIALS	REVISIONS
MAY 29 1997		WJF	ADD
		PHY RES	DEP
		CID RES	PM
		SC RES	ISDA
		X-PUB SERV	LEG
		TRIG PRD	FILE
		CAP	COPY
		PAW	

WJF

May 28, 1997

Mr. Charles Bazan, Supervisor
Tonto National Forest
2324 E. McDowell Road
Phoenix, Arizona 85006

Re: Cyprus Miami Leuch Facility Expansion Project

Dear Mr. Bazan:

Thank you for keeping the White Mountain Apache Tribe informed about the expansion of copper mining on the Tonto National Forest. White Mountain Apache Tribal Elders and Cultural Specialists view the destruction of Apache ancestral lands for economic gain as abhorrent. Because of the intimate, enduring ties that connect my people to their lands, the continuing obliteration of the places we formerly owned and occupied is felt as a direct and painful assault on Apache culture.

Beyond this overarching opposition to the destruction of our lands, the Tribe's specialists have informed me of a number of serious problems created or exacerbated by the expansion of mining operations. Air quality and heritage resource impacts deserve special consideration.

Regarding air quality, please be advised that pollution derived from mining on your Forest has already escalated beyond tolerable levels and that any increase is unacceptable. It saddens me to see the airborne tailings blowing north from the Cyprus Miami facility, and I am deeply concerned that this toxic waste will affect our children. I am also saddened to read a Forest Service document (the Draft EIS) that seems in desperation to argue that an obvious expansion of mining operations will not decrease regional air quality.

Regarding cultural and heritage resources, the White Mountain Apache Tribe finds that the identification of prospective historic properties is incomplete and inadequate due to the failure to identify places and sites significant in Apache history. While I understand that a project involving direct participation by Apache elders and cultural specialists is planned, I find it an unfortunate reflection of misguided priorities that the compliance effort to date has focused exclusively on archaeological and documentary research.

20a. The Cyprus Miami leach pad expansion project does not generate tailings nor does the existing leaching and electrowinning operation. Only leach pads will be expanded under the proposed action. The last generation of tailings from the Cyprus Miami Mine occurred prior to 1986 when the Cyprus Miami concentrator was closed. Since that time, tailings impoundments have undergone extensive reclamation which substantially reduces windblown tailings from the previous activities on the facility. Most of the emissions from the current facility and proposed action are fugitive PM₁₀ emissions which are generally deposited from the atmosphere within a short distance (maximum of 1-20 mile range) of the facility. The White Mountain Apache Reservation is more than 45 miles distant from the Cyprus-Miami leaching facility and proposed project and is likely not affected by this source.

20b. The expansion of the leach pads as shown in the preferred alternative of the DEIS will result in less miles traveled by haul trucks on unpaved roads. This source of fugitive PM₁₀ emissions is the largest contributor to the emissions from the facility. The fewer miles traveled on the unpaved roads results in proportionally fewer emissions from the facility. In addition, due to the aerodynamic size of the particles, they will deposit close to the facility and well short of the White Mountain Apache Reservation. Regular application of water and dust palliatives to the unpaved roads is part of the proposed action and will further mitigate the level of emissions and their effects on local air quality.

20c. The Tonto National Forest and the Bureau of Land Management consulted with interested and potentially affected tribes and conducted an ethnohistoric study of the project areas to determine the history of Native American use and to identify the existence of sacred areas or other areas of concern, and if needed, appropriate mitigation measures. Six interested tribes were invited to participate in the study, which included a literature review, interviews with tribal elders and cultural specialists, and field visits to the project area. The White Mountain Apache, San Carlos Apache, Zuni, and Salt River Pima-Maricopa tribes participated in the study during the spring and summer of 1997.

20a

20b

20c

Mr. Bazan
May 28, 1997
Page 2.

In conclusion, be advised that the White Mountain Apache Tribe opposes the Cyprus Miami expansion on the grounds that the project poses unacceptable threats to Apache health and cultural integrity.

Sincerely,



Ronnie Lupe, Tribal Chairman
WHITE MOUNTAIN APACHE TRIBE

RL/jc

cc: Charles Stringer, Assistant Attorney- Legal Department
John Welch, Tribal Historic Preservation Officer

RESPONSE TO ORAL COMMENTS - PUBLIC HEARING AT GLOBE, ARIZONA

Oral Comments From Persons at Public Hearing in Globe, Arizona

MAYOR DAVID FRANQUERO: Thank you. Good Evening. I'm here representing the City of Globe and all the citizens of the community. I have in my possession this evening a booklet containing committee resolutions in support of Cyprus Miami Mining Corporation's leach expansion project to be presented to you, and this booklet encompasses resolutions passed by the Central Heights Fire Department, the City of Globe, Cobre Valley Community Hospital, the Gila County Board of Supervisors, the Globe Downtown Association, the Globe Rotary Club, the Greater Globe Miami Chamber of Commerce, the Miami Area Unified School District Number 40, The Miami Rotary Club, People for the West Globe Miami Chapter, the Southern Gila County Economic Development Corporation, and the Town of Miami.

In addition to that, I also have a letter of support from Eastern Arizona College, Gila Pueblo Campus.

I would, since I do have the resolution passed by our City, like to read it in its entirety because I think it pretty much expresses the feelings of our citizens as well as those various organizations and municipalities mentioned. This resolution, by the way, was adopted last week by our council unanimously.

"Resolution Number 1241, resolution of the Mayor and City Council of Globe, Gila County, Arizona, announcing support for the Cyprus Miami Mining Corporation leach expansion project and requesting support of said project by the appropriate agencies.

"Whereas, a primary purpose of the City of Globe is to promote the economic, social, cultural, and environmental well-being of the citizens of the greater Globe Miami Community; whereas, copper mining is the primary component of the local economy, tax base and history; and whereas, Cyprus Miami Mining Corporation is the community's leading employer, taxpayer, contributor to charitable activities; whereas, Cyprus Miami Mining Corporation is an environmental leader in the community, as evidenced by its many reclamation, remediation and restoration projects; whereas, Cyprus Miami Mining Corporation has been involved in the National Environmental Policy Act environmental impact statement process since April of 1994 for the Forest Service and Bureau of Land Management acting as joint lead agencies; and whereas, Cyprus Miami Mining Corporation proposes to construct new leaching facilities and an overburden deposition site utilizing the best available demonstrated control technology as prescribed by the State of Arizona; and whereas, the proposed facilities incorporate many positive environmental attributes, it will employ state-of-the-art environmental technologies, will extend the life of the mining operation, will benefit an estimated \$2.9 billion of direct and indirect economic benefits; whereas, the proposed facilities must be partially located on Federal lands because of the lack of private property ownership in Gila County, Arizona, where a mere three percent of the land base is in private ownership; whereas, the failure of the joint lead agencies to expeditiously approve this project will have a detrimental affect on the local economy, tax base, cultural heritage, and environment, and now, therefore, be it resolved that the City of Globe supports the Cyprus Miami Mining Corporation leach expansion project, urges City officials to support said project and requests the joint lead agencies to immediately approve said project.

This is signed by me, the 6th day of May.

Thank you.

MAYOR FRANQUERO Thank you for your comments.

RESPONSE TO ORAL COMMENTS - PUBLIC HEARING AT GLOBE, ARIZONA

VICE MAYOR ROSS BITTNER: Thank you very much for allowing me the opportunity to address you and your Board.

My name is Ross Bittner, I am the Vice Mayor of the City of Globe. I have a written statement that I'll submit to you, but I think my testimony tonight will have to be more relating to my personal experiences.

I am a retired drilling supervisor for a local copper company. I know this area very well that Cyprus is trying to develop. I understand the economics and how it will affect the community in a very positive way. I also understand how the operation itself will not affect the environment in a negative way.

It's a very well thought out program. It's a very well put together project. I feel that it would be a great injustice to our area to not allow the Cyprus Mining Company to proceed with the project.

I think that the numbers, there are numbers of people in this area that depend on the local mines for their livelihood. We have to protect that as we protect the environment. We also have to allow people to maintain a way of living.

Thank you very much.

VICE MAYOR BITTNER. Thank you for your comments.

**RESPONSE TO ORAL COMMENTS - PUBLIC HEARING AT
GLOBE, ARIZONA**

MR. JAMES VALENZUELA: For the record, James Valenzuela is the name, and I'm on the Executive Board for the Southern Gila County Economic Development Corporation. I'm taking this opportunity to express my support for the approval of the expansion permit for the Cyprus Miami Mining Corporation.

Mining encompasses a very competitive market which has a tremendous impact on the economic base of local, state, and federal governments. Extending the life of our local mine will allow for a strong employment base and strengthen our position of not becoming dependent on foreign countries for raw minerals.

With today's improved technology Cyprus is able to address key environmental issues to ensure the safeguard of our environment. The project will implement a water monitoring system, comprehensive closure and reclamation plan, guaranteed by a performance bond.

In conclusion, this project is located in the heart of the copper reserves in this state and we should assist in support of the major industry to strengthen the industrial future of this country.

Thank you.

MR. VALENZUELA: Thank you for your comments.

RESPONSE TO ORAL COMMENTS - PUBLIC HEARING AT GLOBE, ARIZONA

MR. ROBERT MOFFETT: Good Evening. My name is Bob Moffett. I represent the Southern Gila County Economic Development Corporation as its executive director. And on behalf of the Southern Gila County Economic Development Corporation, I've been asked to submit the following verbiage for you.

MR. MOFFETT: Thank you for your comments.

The Southern Gila County Economic Development Corporation supports the Cyprus Miami Mining Corporation's leach field expansion for the following reasons: the project is designed to meet or exceed today's demonstrated control technology as required by the State of Arizona. It has also been noted that Cyprus Miami Mining Corporation will produce a performance bond to ensure stringent ground and surface water monitoring, which we feel is most important.

This project will generate an overall economic impact of \$2.9 billion, supporting local companies, contractors, as well as local school systems, local, state, and federal governments with this tax revenue.

This project will also sustain Cyprus's employment base at the present level and extends the life of mine by 20-25 years. It is opinion of the Southern Gila County Economic Development Corporation that this Cobre Valley region has been the home to mining since 1873 and, therefore, should continue to provide employment through mining as long as the reserves and the technology exist to sustain mining in this part of Arizona.

If this was a new mine proposed next to a Saguaro National Monument or other national treasures, the Southern Gila County Economic Development Corporation would probably oppose this project. But it is not and we are not part of that scenario.

Mines are as much a part of Gila County as is its cattle. So let's sustain our economy while we as an organization help to diversify. We ask that you grant this project and let's go to work.

RESPONSE TO ORAL COMMENTS - PUBLIC HEARING AT GLOBE, ARIZONA

MR. JAKE MASON: My name is Jake Mason. I'm a civil engineer by trade. I'm 73 years old and I've seen a lot of changes in this country.

I was born in a mining town. I grew up in mining towns, and realize the importance of mining to the United States wealth and economy.

I can remember during World War II turning our pennies in, turning our toothpaste tubes in, turning tin cans in, because of a shortage of metals. I was a combat infantryman in the ETO and I carry a piece of steel in my back today from the Krupp works. That is a piece of the mining that I wish hadn't existed.

I look upon these dumps out here in Globe and people cuss them and swear about them, because I see they are rehabilitating them. I know that is a sign of the wealth in this country, that's made this country great has given us things we have. If it can't be grown it must be mined.

My car comes from the mines. My house comes from the mines. My windows in my house comes from the mines. Yet some people think that mining is the worst thing that happens in the United States. I can remember when the government assisted mining to start mining. As matter of fact, if my memory serves my right, Pinto Valley was a result of World War II looking for copper.

I think it's very important and I support this project, and I have seen how the environmental people and we can work together in common sense, but I've also seen the radicalism that's causing terrible hardships, and I'm amazed at the delays that the Carlota Company has gone through and the amount of money they spent, for what?

Thank you very much.

MR. MASON

Thank you for your comments.

RESPONSE TO ORAL COMMENTS - PUBLIC HEARING AT GLOBE, ARIZONA

MR. ROBERT WALISH: Good evening. My name is Bob Walsh. I'm here representing myself.

I live in the area. I live in the town, and I have two specific comments and one general comment.

On page 4-72 of the Draft EIS it states the mine presently has a 70 percent control efficiency. A 70 percent control efficiency is sufficient to prevent exceedance of the confirmed threshold. This corresponds to an annual production level, according to the EIS, of 170 million pounds of cathode copper per year.

a
However, on page 4-77 of the Draft EIS, Cyprus's mitigation is good only up to a level of 160 million pounds per year of cathode copper. This production limit constraint of 160 million pounds per year is not justified and should be removed completely. Especially, since the modeling that produced these sorts of control efficiencies is very conservative.

b
Then on page S-6, Table S-2, under the no action alternative for groundwater, the table indicates that there are on-site exceedances of Arizona standards and they list aluminum, iron, magnesium, chlorine, pH. I know for a fact that there are no Arizona standards for a number of these, including pH.

The general comment I would like to make is I would urge the BLM and the Forest Service to move as quickly as possible to minimize the time between the draft and final. This is vitally important to Cyprus and to the community that this time between the draft and final EIS and record of decision be minimized to the extent possible.

Thank you.

MR. WALISH

a. Thank you for your comments. Appropriate revisions to the text and tables have been made to address your comments.

b. The 160 million pound estimated annual EW copper production (cited in the DEIS on page 4-73 and again in the DEIS page 4-77) is a conservative threshold which will trigger consideration of the application of increased dust control based on the control efficiency schedule on page 4-73. If the annual production were projected to exceed the 170 million pound level, then the dust control efficiency and subsequent watering is required to increase in order to assure Conformity. It is not a production limit as stated in your testimony, as Cyprus Miami can exceed the 160 million pound annual production with the respective control efficiency.

RESPONSE TO ORAL COMMENTS - PUBLIC HEARING AT GLOBE, ARIZONA

MR. SHELDON MILLER: My name is Sheldon Miller. I'm the executive director of the Greater Globe Miami Chamber of Commerce and a resident of Globe Miami.

Our Chamber Board of Directors has followed this project and had presentations from Cyprus officials, as well as the Forest Service, so that we have tried to understand this project.

We are in total favor of this project. We want the decision rendered in favor of this project, and we want it in a timely manner. We want our community to continue with the standards that it is used to and we want to continue work as a mining community.

Thank you.

MR. MILLER.

Thank you for your comments.

RESPONSE TO ORAL COMMENTS - PUBLIC HEARING AT GLOBE, ARIZONA

MR. WAYNE FULLER: Good evening. My name is Wayne Fuller. I am employed as senior environmental engineer at BHP Copper. I'm here tonight speaking on my own personal behalf, but I mention my employment because it's a little relative to my perspective on the project.

In my employment, I basically have partial environment responsibility for properties here, here and here. The proposed project is right in the heart of all this. I have a pretty good handle on what the nature of that property is.

I can't think of a better place to locate new mining facilities than right in the heart of an existing mining district. It's the ideal location.

I've also, in the course of my employment, worked closely with Cyprus on a number of environmental issues and they have consistently demonstrated the strongest commitment to environmental excellence and environmental performance. So, enough about that. Basically, I think given the constraints we have here in this long, drawn-out permitting process, it's time to get off the dime and get this project under way.

Thank you.

MR. FULLER. Thank you for your comments.

RESPONSE TO ORAL COMMENTS - PUBLIC HEARING AT GLOBE, ARIZONA

MS. BETHEL BENNETT: My name is Bethel Bennett. I am here with the Globe Miami People for the West.

Since 1991, my family has lived with effects of the downsizing of the copper industry, and I would like to say that fast food restaurants, motels, and Wal-Mart offer jobs, but they are minimum wage at best. They do not provide for either large house payments nor large car payments. Rural Arizonans need high-paying jobs and that's what Cyprus Miami can offer. I support the Cyprus leach pad extension and solid employment it will provide Globe Miami.

MS. BENNETT:

Thank you for your comments.

RESPONSE TO ORAL COMMENTS - PUBLIC HEARING AT GLOBE, ARIZONA

MS. EVELYN BINGHAM: My name is Evelyn Bingham. And I'm representing myself as a resident of the Globe Miami area. I would just like to make a statement in support of the project.

I think it's a well-designed project that is, obviously, adjacent to a well-established mining area, and I think it supports the economy, and it should go ahead.

That's all I have to say.

MS. BINGHAM.

Thank you for your comments.

RESPONSE TO ORAL COMMENTS - PUBLIC HEARING AT MESA, ARIZONA

Oral Comments From Persons at Public Hearing in Mesa, Arizona

MR. ROSS BITTNER: Good evening. My name is Ross Bittner. I am the Vice Mayor of the City of Globe. I have that privilege. I'm here tonight to present some resolutions to you, and before I start, I'd like to tell you that in the last 24 hours, our position hasn't changed. We're still in support.

I have resolutions to present to you from the Globe-Miami area organizations: the Central Heights Fire District; the City of Globe; Cobre Valley Community Hospital; Gila County Board of Supervisors; Globe Downtown Association; Globe Rotary Club; Greater Globe-Miami Chamber of Commerce; the Miami Area Unified School District Number 40; Miami Rotary Club; People for the West, Globe-Miami Chapter; Southern Gila County Economic Development Corporation; and the Town of Miami. We have a letter of support also here from the Eastern Arizona College, Gila Pueblo Campus.

There is a letter of my personal comments that will be included, a copy of the City of Globe's resolutions is also included for you. And I must tell you again that the City of Globe understands the environmental issues involved here. We also understand the efforts made by Cyprus Miami Mining Company. We're well satisfied with what has taken place. We're well satisfied with their plan. If I told you that we've read the Draft EIS completely, I know you'd kind of scoff at me, but we've thumbed through it. We're very familiar and very comfortable with that. We are in total support of this project.

Thank you very much.

MR. BITTNER.

Thank you for your comments.

RESPONSE TO ORAL COMMENTS - PUBLIC HEARING AT MESA, ARIZONA

MR. BOB MOFFETT: We are here this evening - My name is Bob Moffett. I'm the Director of the Southern Gila County Economic Development Corporation. And I'll try to slow down so that you can keep up with me.

MR. MOFFETT

Thank you for your comments.

We had submitted a letter last night to this panel letting you know that we are in support of this project, and I would just like to paraphrase again what we had said last night so that we could reinforce the fact that this organization, as an economic development, as a group, feel it's very vital for the economy of the Globe-Miami and greater Cobre Valley area. And let me just say that our emphasis would be to demonstrate that this project, when it is completed, will demonstrate and have an overall economic impact of 2.9 million dollars supporting local companies and contractors, as well as the local school systems, as well as local, state, and federal governments in the form of taxes that would be generated as a result of the income from this project.

This project will also sustain Cyprus's employment base at its present level and will help to sustain the life of the mine for the next 20 - 25 years. We also wanted to state that we were also very aware of the environmental impacts that this project represents, and that as example, if we were to say that this mine was going to be opening up next to the Saguaro National Monument outside of Tucson or one of the other national treasures, we would probably be opposed to this project as well.

But understanding that since 1873, there has been mining in our community and has been the mainstay of our organization and the mainstay of our community, we feel that this project should go forward, and that we as the Southern Gila County Economic Development Corporation support this project wholeheartedly.

Thank you very much.

**RESPONSE TO ORAL COMMENTS - PUBLIC HEARING AT
MESA, ARIZONA**

MR. KEVIN WEBSTER: My name is Kevin Webster. I'm the Environmental Resource Manager for Carloia Copper.

A few of us at Carloia Copper have read the EIS from cover to cover. We are convinced of a number of things, but there are three that are noteworthy.

Number one, we are convinced that Cyprus Miami is in compliance with all requirements. We have gone through it very cautiously. We are convinced that the best use of the land in question is for mining. And we are convinced that the expansion must and should proceed without delay.

Thank you.

MR. WEBSTER

Thank you for your comments.

**RESPONSE TO ORAL COMMENTS - PUBLIC HEARING AT
MESA, ARIZONA**

MR. JACK ROBERTSON: My name is Jack Robertson. I'm the senior engineer with Carlota Copper.

I would like to kind of reiterate what Kevin said, and that Carlota is very much in favor of the expansion of the leach facilities, and we fully support that, and that we do feel it is the proper and best use of the land and the mineral resource contained therein.

Thank you.

MR. ROBERTSON

Thank you for your comments.

**RESPONSE TO ORAL COMMENTS - PUBLIC HEARING AT
MESA, ARIZONA**

MR. SHELDON MILLER: Good evening. My name is Sheldon Miller. I'm a resident of Globe-Miami, and I happen to be representing tonight the Greater Globe Miami Chamber of Commerce.

You heard that we had a resolution of support for this project. I want you to be aware that over the last three years, our board has had presentations from the U.S. Forest Service and from Cyprus. So we understand this project to the best of our abilities. We want you to know that we are in total support of this project.

Cyprus Miami Mining is a quality mining company. Our community wants to be in the mining business. We want to retain our quality of life. We want to continue the high standards that we have in Globe-Miami. We urge you for a favorable decision on this project. We also urge you to do it in a very timely fashion.

Thank you.

MR. MILLER

Thank you for your comments.

RESPONSE TO ORAL COMMENTS - PUBLIC HEARING AT MESA, ARIZONA

MR. MASON COGGIN: My name is Mason Coggin. I'm the Director for the Arizona Department of Mines and Mineral Resources.

MR. COGGIN Thank you for your comments.

The legislature in the State of Arizona many years ago decided that they wanted an agency to promote the development of the mineral resources in Arizona primarily because we use those mineral resources.

Every time you turn on that switch to throw these lights on over here, you're putting about 600,000 tons of copper to work. It's our slave. When we turn that on, we're connecting ourselves to probably a coal-fired power plant in the northeastern part of the state. It if wasn't for that, we'd be sitting here in the dark, probably in the heat.

The reason we're here tonight is because there's only three percent of the land in Gila County that's privately held, and that three percent doesn't include this little piece of ground that they want to mine on. That piece of ground is controlled by the government, the Bureau of Land Management, and the Forest Service. If it weren't for that, we wouldn't be here talking to you folks this evening.

It's unfortunate that we have to go through such a long, tedious process to do something we've been doing for the last 120 years up there in that community, and I'm kind of embarrassed about that, the fact that it takes from 1994 - and I'm sure there was a lot of work that went into it before they filed their first plan until present, is a long time. That period of time in there represents a lot of hard work that went into this project to show that it's environmentally sound, that it's economically sound, and right now, there's a community of about - How many people you got in Globe? - five or 6,000 people in Globe who are waiting to buy a new car based on the decisions that you're going to come up with tonight. And those people not only are the miners, buy they're also the people that live in that town that are going to sell those cars, refrigerators, houses, or whatever else those people are going to buy.

Mining in Arizona is a \$5 billion a year business. Basically that represents about 10 percent of our economy in Arizona. One out of every ten dollars running around this state probably comes from mining. We don't hire an awful lot of people in the mining industry directly, but there's probably another 50,000 jobs in this state that depend indirectly on the mining industry.

We produce two-thirds of the nation's copper. I'm proud to say that that leadership in the nation's copper production we've held since about 1910, and I'm very proud of that. The fact that Arizona has been able to maintain that position depends upon our ability to mine lower and lower grade materials and expand our operations. One of the things that makes it that way is the great efficiencies that we can achieve in our operations today.

The only difference I can see between these different alternatives that they've offered you is that one alternative - Alternative A, is it? - will give that mine another generation or will make another generation of mining possible in that town. That means that there will be another generation of people growing up in the Globe-Miami area, going to school and working in those mines and making some of the highest income in Arizona. The average income for a person that works for one of these copper companies in Arizona is \$35,000 a year. That beats the heck out of flipping burgers in Mesa.

I think that's it. I'm glad I had this opportunity. Thank you very much.

**RESPONSE TO ORAL COMMENTS - PUBLIC HEARING AT
MESA, ARIZONA**

MR. JAMES VALENZUELA: Jim Valenzuela. I'm a board member of the Southern Gila County Economic Development Corporation, and I'd like to say a few words on behalf and in support of this project.

We know for a fact that this is a major copper reserve in North America. We know for a fact, and it is common knowledge, that Cyprus will demonstrate controlled technology - demonstrate controlled technology on this project. We know that they will have a stringent ground/surface water monitoring systems with a performance bond. We know the economic impact that this type of project has in our local areas, and also to the state and federal level. We know for a fact the employment base that this brings to our area in a county that does have a high unemployment rate. We know that Cyprus is going to be addressing the prehistoric and historic sites. We know that from last night's comments that Cyprus has accepted some of the recommendations to their project and overall plan.

So with all this common knowledge and facts, I feel that we ought to expedite this project and allow them to start their operation.

Thank you.

MR. VALENZUELA

Thank you for your comments.



4.0 APPENDICES

- A. **CMMC LEACH FACILITIES EXPANSION PROJECT HABITAT MITIGATION AND MONITORING PLAN**

- B. **MEMORANDUM OF AGREEMENT AMONG THE USDA FOREST SERVICE, USDI BUREAU OF LAND MANAGEMENT, US ARMY CORPS OF ENGINEERS, AND THE ARIZONA STATE HISTORIC PRESERVATION OFFICER REGARDING THE CYPRUS MIAMI LEACH FACILITY EXPANSION PROJECT**

**APPENDIX A.
CMMC LEACH FACILITIES EXPANSION PROJECT HABITAT
MITIGATION AND MONITORING PLAN**

**CMMC LEACH FACILITIES
EXPANSION PROJECT**

**HABITAT MITIGATION
AND MONITORING PLAN**

Prepared For:

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and

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REVISED
OCTOBER 28, 1997
Project No. 97202-G-002

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SUMMARY

The Cyprus Miami Mine facility is located north of the town of Miami, Arizona on primarily privately held lands. The Cyprus Miami Mining Corporation (CMMC) Leach Expansion project is located on a combination of Forest Service and Bureau of Land Management administered public lands, and private lands owned by CMMC. WestLand Resources, Inc. was retained by Whitman and Company to prepare a Habitat Mitigation and Monitoring Plan (HMMP) for the CMMC Leach Expansion Facility CWA 404 Permit. The HMMP outlines, in detail, mitigation elements identified in the Draft Environmental Impact Statement (DEIS) published for this project in April 1997. This final HMMP was updated to reflect comments provided by the Arizona Game & Fish Department (AGFD) and the Army Corps of Engineers (ACOE) on earlier versions of this document.

The ACOE has determined that a total of 9.22 acres of waters of the United States are present within the proposed project area. Drainages (washes) total 3.94 acres, surface impoundments total 5.22 acres, and wetlands total 0.06 acres. The project will impact a total of 8.61 acres of these jurisdictional areas. These impacts include 5.22 acres of open water associated with man-made stormwater impoundments upgradient of existing mine facilities, 3.33 acres of natural drainages, and 0.06 acres of jurisdictional wetland habitat.

A combination of on-site and off-site mitigation activities will be utilized to meet the mitigation objectives outlined in the DEIS. Specific mitigation goals and objectives are:

- Create 5.5 acres of open water habitat,
- Create 3.4 acres of mesquite dominated riparian habitat,
- Enhance 6.6 acres of mesquite dominated riparian habitat,
- Create 0.06 acres of wetland habitat, and
- Create one acre of mixed broadleaf riparian habitat.

Mitigation will occur at two distinct locations: Sunflower Ranch and the Webster Impoundment. The Sunflower Mitigation Area is located between State Route 88 and Pinal Creek, approximately 7 miles north of Globe, Arizona and within approximately 5 ½ miles of the proposed GMC leach pad. The Webster Impoundment will be located east of the proposed BL Leach Facility, approximately 4.5 mile E, NE of the town of Miami.

Out-of-kind mitigation compensation ratios provided by AGFD were utilized to determine the acreage of created and enhanced mesquite dominated riparian habitats. Out-of-kind ratios were requested by the AGFD because of the presence of cottonwood/sycamore habitats along some of the jurisdictional waters impacted by development of the leach expansion project. For creation of mesquite dominated riparian habitats the acreage compensation ratio is 2:1. For enhancement of mesquite dominated riparian habitats the acreage compensation ratio is 4:1. At the Sunflower Ranch Mitigation site, creation of 3.4 acres of mesquite dominated riparian habitat and enhancement of approximately 6.6 acres of mesquite dominated riparian habitat will mitigate for impacts

to 3.34 acres of jurisdictional waters.¹ Above and beyond this mitigation requirement, CMMC will also create an additional one acre of broad leaf riparian habitat at Sunflower Ranch.

Quantitative measures have been established to determine when implementation of mitigation, as outlined in this HMMP, has been successfully completed at each of the sites. Monitoring of annual performance objectives and these success criteria will occur over a five-year period at the Sunflower Mitigation site and over a seven-year period at the Webster Impoundment. CMMC will submit annual reports to the Regulatory Branch of the Army Corps of Engineers Phoenix, Arizona office.

¹At a 2:1 compensation ratio, creation of 3.4 acres of mesquite dominated riparian habitat will mitigate for 1.7 acres jurisdictional waters. The remaining 1.63 acres of jurisdictional waters ($3.33-1.7=1.63$) would be mitigated by enhancement of 6.52 acres of mesquite dominated riparian habitat.

1. INTRODUCTION

WestLand Resources, Inc. was retained by Whitman & Company to prepare a Habitat Mitigation and Monitoring Plan (HMMP) for the CMMC Leach Expansion Facility CWA 404 Permit. The HMMP outlines in detail mitigation elements identified in the Draft Environmental Impact Statement (DEIS) published for this project in April 1997. This final HMMP was updated to reflect comments provided by the AGFD and the ACOE on earlier versions of this documents.

The format of the HMMP follows the outline developed by the ACOE. A description of the project and a summary of the impacts to jurisdictional waters of the United States is provided first, followed by descriptions of the proposed mitigation sites and activities. The last part of the HMMP summarizes proposed maintenance, monitoring, and contingency notification requirements.

2. PROJECT DESCRIPTION

2.1. PROJECT LOCATION

The existing Cyprus Miami Mine facility is located north of the town of Miami, Arizona on primarily privately held lands. The CMMC Leach expansion project is located on a combination of Tonto National Forest (TNF) and Bureau of Land Management (BLM) administered public lands and private lands owned by CMMC. The project is located at the western and northern extents of the current mine operation. The proposed expansion project is more specifically located in portions of Sections 3 and 4 of T1S R14E and portions of Sections 13, 14, 21, 22, 27, 28, 33, and 34 of T1N R14E of the Gila and Salt River Base and Meridian (Figure 1).

2.2. PROJECT SUMMARY

The preferred action alternative identified in the CMMC Leach Expansion DEIS was developed after extensive CWA 404(b)(1) and NEPA alternatives analysis by the TNF, BLM, ACOE, and CMMC. The Preferred Action consists of constructing three new leach pads (referred to as the Oxhide facility, the BL facility, and the GMC facility) and one waste rock disposal site (Barney Overburden disposal site), together with the required ancillary facilities such as access/haul roads, solution pipelines, and surface water control structures. The leach pads would be used for placement and subsequent leaching of copper-bearing ore mined from reserves located on lands owned by CMMC.

Material placed on the lined leach pads would be treated and rinsed with sulfuric acid solutions. The copper-bearing leach solution draining from these leach pads would be collected and processed in the company's existing solvent extraction and electro-winning plants to produce high quality copper cathode. The waste rock disposal site would be constructed to accommodate uneconomic or non-mineralized material removed from the active mining operation. Ore and waste rock would be hauled from existing pits. Haul roads and service roads would be regularly watered and/or treated with a dust suppressant to minimize dust generation. All operations would be conducted throughout the calendar year and no seasonal or other temporary shut-downs are anticipated.

Under present assumptions, the Oxhide, BL, and GMC leach facilities and Barney waste rock disposal site would operate for 14 years. Development of the proposed leach facilities would enable continuous ore placement from the mine at an average annual rate of 29 million tons through 2011, which represents the final year of the current planning schedule.

CMMC has expanded its ore replacement rate to produce approximately 160 million pounds of copper per year. The use of the new leach facilities would allow continued production at this increased rate from 1997 through 2011. Total copper recovery from commencement of the proposed expansion facilities through closure in approximately 2021 is estimated at 2.8 billion pounds. Final reclamation for the CMMC leach expansion project is expected to be completed in 2026.

More detailed discussions of the proposed expansion plan can be found in the DEIS and Plan of Operations submitted to the TNF and BLM.

2.3. RESPONSIBLE PARTIES

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2.4. JURISDICTIONAL IMPACTS

2.4.1. AREA OF CORPS JURISDICTION

ACOE regulates the discharge of dredged and/or fill material into waters of the United States, including adjacent wetlands. Field delineations of jurisdictional wetlands followed the protocols and data provided in the 1987 *Corps of Engineers Wetlands Delineation Manual* (Technical Report Y-87-1). Detailed results are presented in *Delineation of Potentially Jurisdictional Water of the United States at Four Proposed Expansion Sites Near Miami, Arizona: Cyprus Miami Mining Corporation Leach Facility Expansion (April 1995)* (Cyprus Miami Mining Corporation 1995)

The ACOE has determined that a total of 9.22 acres of waters of the United States are present within the overall proposed project area (Table 1). Drainages (washes) total 3.94 acres, surface impoundments total 5.22 acres, and wetlands total 0.06 acres (Table 1).

Table 1. Summary of Jurisdictional Waters of the United States at Cyprus Miami near Miami, Arizona

Facility Site	Drainages	Surface Impoundments	Wetlands	Total (acres)
Oxhide	0.28	1.53	0.059	1.869
GMC	0.57	-	0.001	0.571
BL	2.73	3.69	-	6.42
Barney Waste Rock	0.36	-	-	0.36
TOTAL	3.94	5.22	0.06	9.22

Source: Cyprus Miami Mining Corporation 1995b

2.4.2. IMPACT ASSESSMENT

The project will impact a total of 8.61 acres of waters of the United States (jurisdictional areas). These impacts include 5.22 acres of open water associated with stormwater impoundments upgradient of existing mine facilities, 3.33 acres of natural drainages, and 0.06 acres of jurisdictional wetland habitat. Table 2 summarizes impacts to jurisdictional waters associated with proposed expansion facilities.

The watershed containing the project area is isolated by ongoing mining activities from the regional drainage system. Open water areas that are considered jurisdictional are all human-made impoundments that were created to support ongoing mining activities or were developed as water improvements on the CMMC grazing allotments. These impoundments provide a source of operation water for the mine and are part of the mine's stormwater management system. In addition to these functions, the impoundments also provide a source of water

to local wildlife and livestock as well as habitat for water fowl, amphibians, native fish (longfin dace only, in the Oxhide surface water impoundment) and non-native fish. The extent of riparian habitat surrounding these impoundments is limited due to historic fluctuations in impoundment elevations and use of these areas by cattle.

The natural drainages that are jurisdictional convey stormwater to existing surface water impoundments. These drainages are all ephemeral and support a limited amount of riparian (mesoriparian and xeroriparian and only 0.06 acres of jurisdictional wetlands) habitat.

Table 2. Summary of impacts to jurisdictional areas at expansion facilities at Cyprus Miami Mining Corporation operations.

Expansion Facility	Impacted Waters of the United States			
	Natural drainages (ac)	Open Water (ac)	Wetland (ac)	Total impact area (ac)
Oxhide Leach Facility	0.28	1.53	0.059	1.869
GMC Leach Facility	0.57	---	0.001	0.571
BL Leach facility	2.12	3.69	---	5.81
Barney Overburden Site	0.36	---	---	0.36
TOTAL	3.33	5.22	0.06	8.61¹

¹ Based upon modeled surface discharges and impoundment surface water elevation, approximately 0.61 acres of jurisdictional waters will not be inundated at the 1 percent exceedence probability level and were not included in impact calculations.

2.4.3. FUNCTIONS AND VALUES OF IMPACTED JURISDICTIONAL AREAS

The functions and values associated with jurisdictional waters within the project area include: 1) hydrologic functions primarily related to the conveyance of ephemeral stormwater flow to existing surface water impoundments; and 2) the creation and maintenance of wildlife habitat values that are associated with riparian and aquatic resources along the natural drainage ways and within the man-made impoundments.

Based upon data provided in the DEIS, approximately 5.1 acres of riparian habitat will be impacted by the proposed action. Impacts would occur to 4.0 acres of cottonwood dominated riparian habitat, 0.4 acres of Gooding's willow dominated habitat, 0.6 acres of cottonwood-sycamore dominated riparian habitat, and 0.1 acre of tamarisk dominated riparian habitat. The estimated acreage of riparian habitat includes some of the ACOE jurisdictional areas. Typically, the vegetation that distinguishes riparian habitat from adjacent upland habitat, forms along the margins of ACOE jurisdiction and is one of the indicators of ordinary high water used to define the lateral boundaries of Corps' jurisdiction.

3. RESTORATION GOALS

A combination of on-site and off-site mitigation activities will be utilized to meet mitigation objectives. The specific mitigation goals and objectives are:

- Create 5.5 acres of open water habitat,
- Create 3.4 acres of mesquite dominated riparian habitat,
- Enhance 4.6 acres of mesquite dominated riparian habitat,
- Create 0.06 acres of wetland habitat, and
- Create one acre of mixed broadleaf riparian habitat.

Out-of-kind mitigation compensation ratios provided by AGFD were utilized to determine the acreage of created and enhanced mesquite dominated riparian habitats. Out-of-kind ratios were requested by the AGFD because of the presence of cottonwood/sycamore habitats along some of the jurisdictional waters impacted by development of the leach expansion project. For creation of mesquite dominated riparian habitats the acreage compensation ratio is 2:1. For enhancement of mesquite dominated riparian habitats the acreage compensation ratio is 4:1. At the Sunflower Ranch Mitigation site, creation of 3.4 acres of mesquite dominated riparian habitat and enhancement of approximately 6.6 acres of mesquite dominated riparian habitat will mitigate for impacts to 3.34 acres of jurisdictional waters.¹ Above and beyond this mitigation requirement, CMMC will also create an additional one acre of broad leaf riparian habitat at Sunflower Ranch.

Off-site mitigation will occur at the Sunflower Ranch property along the west bank of Pinal Creek, Gila County, Arizona (Figure 2). This property is owned by CMMC and has favorable infrastructure and access attributes necessary to assure project success.

On-site mitigation opportunities are limited to the proposed stormwater management facilities at the Webster impoundment upgradient of the proposed BL leach pad (Figure 1 and 3). At this site, approximately 5.5 acres of open water habitat and 0.06 acres of jurisdictional wetlands will be created.

All of Sunflower Ranch mitigation area will be fenced to exclude cattle. Exclusion of cattle from this area is expected to enhance habitat values beyond the plantings proposed for this area. This potential enhancement has not been factored into mitigation credits or compensation ratios.

3.1. TYPES OF HABITATS TO BE CREATED

Four habitat types will be created to mitigate for impacted jurisdictional waters — 1) open water habitat similar in character to habitats that will be impacted, 2) a mesquite dominated riparian habitat, 3) a wetland fringe

¹At a 2:1 compensation ratio, creation of 3.4 acres of mesquite dominated riparian habitat will mitigate for 1.7 acres jurisdictional waters. The remaining 1.63 acres of jurisdictional waters (3.33-1.7=1.63) would be mitigated by enhancement of 6.52 acres of mesquite dominated riparian habitat.

adjacent to the open water habitat, and 4) a mixed broadleaf riparian habitat. Each of these is discussed in greater detail below.

3.1.1. OPEN WATER HABITAT

The Webster impoundment that will be created above the BL Leach Pad will function in the same fashion as existing stormwater impoundments that will be impacted. The total watershed that drains into the Webster impoundment is approximately 819 acres, including a 588-acre watershed that drains directly to the impoundment and a 231-acre watershed that drains into the impoundment via the northern perimeter surface water diversion facility. The maximum potential surface area of the impoundment is approximately 60 acres. However, the probable maximum pool size for this impoundment is approximately 16 acres. Figure 3 depicts the maximum design elevation for the impoundment and pool size with a 10 percent, 25 percent, and 50 percent exceedence probability.² Pool sizes for the 10, 25, and 50 percent exceedence probability are 8.2, 5.5, and 3.3 acres, respectively. Water storage volumes for the 10, 25, and 50 percent exceedence probability are approximately 144, 84, and 38 acre-feet, respectively. The functions and values of aquatic resources within the Webster Impoundment and the operations and fluctuations of the Webster Impoundment would be similar to those of the existing stormwater impoundments.

3.1.2. MESQUITE DOMINATED RIPARIAN HABITATS

Mesquite dominated riparian habitats, often referred to as mesquite bosque, are riparian woodlands dominated by mesquite and other large trees that obtain their maximum development on alluvium of old desiccated flood plains that are generally 1.5 m to 6 m above the river channel. Typically, fewer than 25 percent of the trees found within the bosque are species other than mesquite. Co-dominant species found in this habitat type typically include netleaf hackberry, desert-willow, velvet ash, Gooding's willow, cottonwood, and Mexican elderberry.

The proposed mitigation plan will create approximately 3.4 acres of mesquite bosque and will enhance an additional 6.6 acres of mesquite dominated habitat (the total acreage of created and enhanced is ten). Mesquite bosque would be created and/or enhanced using nursery grown plant materials. Approximately 75 percent of the planted material would be mesquite and the remaining 25 percent would be other native trees and shrubs typical of the habitat type. (Refer to Section 5.5 for detailed planting specifications.)

The 3.4 acres of created habitat would occur on existing horse pasture. Areas where habitat enhancement will take place are adjacent to the horse pasture. Planting density in the horse pasture will average 98 trees per acre while planting density in the adjacent areas that will be enhanced will average approximately 23 trees per acre.

² Probability of exceedence is an estimate of the probability that the pool elevation would exceed a given point in any given year. It does not reflect the percentage of time that the pool would be at that elevation for the typical year.

3.1.3. CREATED WETLAND HABITAT

The relatively small acreage of wetland habitat required to achieve 1:1 acreage mitigation (2,613 ft²) could be created along the fringe of the stormwater impoundment. Created wetland habitat will be dependent upon storms that occur throughout the year -- not lower frequency events such as the two year, 10 year, or greater storms. The runoff from a watershed and resultant storage volume of the stormwater impoundment are not easily predicted for higher frequency (less than one year return interval) storm events.³ Figure 3 depicts the impoundment, probabilistic contours of water surface elevation, and the most likely locations for wetland habitat to be created.

The creation of this habitat along with other riparian vegetation will require the permanent exclusion of cattle from the impoundment fringe. It is anticipated that within areas subject to the most frequent inundation, an herbaceous, emergent wetland habitat dominated by cattails and possibly bulrush will become established. Farther from the edge of the permanent impoundment, hydro-riparian and mesoriparian species, such as cottonwood and willow, may become established and enhance the overall quality of habitat within and adjacent to the impoundment.

3.1.4. CREATED MIXED BROADLEAF RIPARIAN HABITAT

Mixed broadleaf riparian habitats created at Sunflower Ranch will be dominated by Fremont cottonwood and Arizona ash. Fremont cottonwood are found in alluvial soil along the flood plains of low elevation rivers and streams. Mature Cottonwood occur along Pinal Creek at Sunflower Ranch. Arizona Ash are typically found along streams and subirrigated areas. This species is typical of major drainages in Mojavean, Sonoran, Chihuahuan Deserts and desert grasslands of southwestern oak woodland from 2,500 to 6,000 feet elevation.

One-acre of cottonwood/ash mixed broad leaf riparian habitat will be created in a disturbed area at the north end of the Sunflower Ranch Mitigation area. The planting density for this habitat type will be 80 trees/acre.

3.2. SUCCESS CRITERIA

Success criteria for each of the habitat types are described below. These quantitative measures will be used to determine when implementation of mitigation as outlined in this HMMP has been successfully completed at each of the sites.

In the event of any act of God or an event resulting from the negligence of others, (such as flood, fire or pestilence), CMMC will not be held responsible for replacement or repair of impacted mitigation areas after the

³ Runoff coefficients used to statistically estimate runoff vary with slope, ground cover, and antecedent moisture content of the soil. Because watersheds are not homogeneous, all of these factors can vary greatly on a seasonal and spatial basis. The variability of rainfall and runoff coefficients increases with increases in runoff frequency. In other words, predictions for a 2-year storm are less accurate than for a 100-year storm.

5 year (for Sunflower Ranch site), and the 7 year (for the Webster Impoundment site), monitoring periods are complete, and the ACOE has accepted the mitigation as successful.

3.2.1. OPEN WATER HABITAT

The goal for mitigation of impacts to man-made open water habitats will be the creation of an approximately equivalent (no less than 4 acres) acreage of open water habitat in the new impoundment area. Measurement of the acreage of open water area created will be based on ordinary high water indicators such as debris line, substrate character, and vegetation.

3.2.2. MESQUITE DOMINATED RIPARIAN HABITATS

Created and enhanced mesquite dominated riparian habitats will be considered established when 402 of the planted trees (80 percent of the 502 trees planted) are in a living, growing condition five years after planting.

3.2.3. CREATED WETLAND HABITAT

The ultimate configuration and size of the wetland mitigation provided by the Webster impoundment is dependent upon the establishment and subsequent degree of fluctuation of pond elevations associated with high frequency storm events. The establishment of the "typical" impoundment elevation and development of wetland habitat along the fringe of the impoundment will take several years. Because the agencies preferred alternative will delay wetland impacts at the Oxhide Leach Facility location for 7 years, we propose monitoring the development of wetland and riparian habitat development along the fringe of the Webster Impoundment for a period of 6 years. Should monitoring efforts determine that less than 0.05 acres⁴ of jurisdictional wetlands are created, the contingency measures outlined later in the HMMP will be implemented. If, as outlined as a potential in the draft EIS, the disturbance of the wetland habitat within the Oxhide Leach Facility does not occur the need for wetland creation will no longer exist.

3.2.4. CREATED MIXED BROADLEAF RIPARIAN HABITAT

The cottonwood/ash riparian habitat created at Sunflower Ranch is being created above and beyond the required mitigation that results from application of AGFD compensation ratios. While every effort (vertical filling, if necessary, appropriate irrigation regimes, fencing, etc.) to successfully establish these trees will be made, warranty beyond the establishment period is not provided for this additional component of the mitigation plan.

⁴ The acreage value (0.05 acres) that would trigger implementation of contingency measures is less than the 0.06 acres of wetlands that may be impacted. We consider the creation of 0.05 acres of wetlands a reasonable degree of success, particularly after considering additional mitigation being provided at Sunflower Ranch.

4. PROPOSED MITIGATION SITE

4.1. LOCATION AND SIZE OF MITIGATION AREAS

The Sunflower Ranch Mitigation Area is located between State Route 88 and Pinal Creek approximately seven miles north of Globe, Arizona. Specifically, the mitigation site is located as follows:

Portions of NE 1/4 of the NE 1/4 of Section 19 and portions of the SW 1/4 of the SE 1/4 of Section 18 and portions of the SE 1/4 of the SE 1/4 of Section 18 in Township 2 North, Range 15 East.

The Webster Impoundment will be located east of the proposed BL Leach Facility, approximately 4.5 mile E, NE of the Town of Miami, in the NW 1/4 of Section 22, Township 1 North, Range 14 East.

Figures 1 through 3 depict the location and approximate size of these facilities.

4.2. OWNERSHIP STATUS

The Webster Impoundment mitigation site is located on public lands administered by the TNF (Figure 1).

The Sunflower Mitigation site is located on lands owned by CMMC (Figure 5).

4.3. EXISTING FUNCTIONS AND VALUES OF MITIGATION AREAS

The Webster Impoundment mitigation site is primarily an Oak Chaparral habitat type with only minor occurrences of pinyon-juniper and juniper dominated habitats along the southwestern boundary of the impoundment. The proposed impoundment location contains no hydro- or mesoriparian habitat. The existing functions and values of the Webster Impoundment mitigation site have been documented in baseline studies prepared for the CMMC Leach Expansion project and is summarized in the Leach Expansion Project DEIS.

The Sunflower Ranch mitigation site contains five distinct habitat types; low density mesquite dominated riparian habitat, high density mesquite dominated riparian habitat, cottonwood dominated riparian type, agricultural pasture, and disturbed flood plain terrace. Figure 4 depicts the distribution of all but the disturbed flood plain terrace which occurs at the north end of the mitigation site. Three of these habitat types will be used for mitigation purposes; agricultural pasture, low density mesquite dominated riparian habitat, and disturbed flood plain terrace.

High density mesquite dominated riparian habitat occurs primarily between State Route 88 and the southern portion of the habitat enhancement area (Figure 4). This habitat is almost exclusively mesquite with an herbacious understory of annual grasses such as red brome. Canopy coverage within the high density mesquite dominated riparian habitat is estimated to range from 80 to 100 percent.

The majority of the site is low density mesquite dominated riparian habitat adjacent to Pinal Creek. In addition to mesquite, other common plant species include graythorn, whitethorn acacia, desert willow, and catclaw acacia. Canopy coverage in this habitat is estimated to be between 40 and 60 percent. [The primary objective of proposed habitat enhancement efforts is to establish mesquite and other species that will, with time, create habitat coverage similar to high density mesquite dominated habitats adjacent to lower density habitats.]

A cottonwood dominated riparian habitat occurs in three distinct patches within the fenced mitigation area. This habitat is dominated by relatively mature cottonwood trees. The understory of this habitat is open and dominated by annual grasses such as red brome.

The disturbed flood plain terrace is adjacent to Pinal Creek, at the north end of the Sunflower Ranch mitigation site. Surface soils at this site are sandy, alluvial deposits. Overall, tree and shrub density is extremely low and primarily limited to a few mature cottonwood trees.

4.4. PRESENT AND PROPOSED USES OF MITIGATION AREAS

The Webster Impoundment mitigation area is public land, managed by the TNF under its existing Forest Management Plan. The site has been proposed for use as a Stormwater Impoundment as a component of the CMMC Leach Expansion Project currently under NEPA review by the TNF, BLM, and ACOE. Its use as a mitigation site is an integral component of the proposed stormwater impoundment. Long term management of this impoundment area would be dictated by final conditions of the operating plan ultimately approved by the BLM and USFS, and by conditions established by the ACOE for the CWA Section 404 permit for the proposed project.

The Sunflower Ranch site is currently used for grazing/agricultural purposes. The portions of the property that have been identified within the HMMP and fenced pursuant to this plan will be set aside by CMMC in perpetuity. In the unlikely event of a transfer of title, the mitigation areas at the Sunflower Ranch site (areas within the proposed fence depicted in Figures 7a & b) will have a deed restriction placed upon the land that limits land use to the mitigation purposes outlined in this HMMP. These restrictions will specifically eliminate grazing and pasturage of domestic livestock and construction activities that would require the clearing of vegetation within habitat creation or enhancement areas outlined in this HMMP. Specific easements, as generally indicated in the plan, will be reserved for fence maintenance, access, and construction and maintenance of utilities which currently, or may in the future, cross the property. These corridors and areas are indicated on Figures 7a & 7b and 11.

4.5. PRESENT AND PROPOSED USES OF ALL ADJACENT AREAS

Some of the lands adjacent to the proposed impoundment, primarily to the east and south of the impoundment would be used for proposed waste rock and leach pads as described in the DEIS prepared for the CMMC Leach Expansion Project. Lands to the north and west of the proposed Webster Impoundment are Forest Lands managed by the TNF under the guidelines of its existing Forest Management Plan.

The parcels of land surrounding the Sunflower site are owned by CMMC with the exception of lands approximately 200 feet west of State Route 88 and an inholding on the eastern border of the mitigation area which are public lands administered by the TNF under the guidelines of its existing Forest Management Plan. The Sunflower Ranch property contains the Sunflower Well Field which is operated by CMMC and is located on the east side of the Pinal Creek, approximately 400 feet from the eastern boundary of the planting areas. Lands not incorporated into proposed mitigation areas by the proposed fence construction depicted in Figures 7a & b will continue to be used for agricultural purposes.

4.6. ZONING

The Webster Impoundment site is public land and has no existing zoning. The Sunflower Ranch site is zoned General Unclassified District (GU). Permitted uses include farm and non-farm residential uses; farms, ranches, recreational and commercial uses. Subdivision of land for sale, rent, or lease, for residential, commercial, or industrial use, will require re-zoning.

5. IMPLEMENTATION PLAN

5.1. RATIONALE FOR EXPECTING IMPLEMENTATION SUCCESS

The rationale for expectation of successful creation of each of the habitats is summarized below.

5.1.1. OPEN WATER HABITAT

The creation of open water habitat proposed for this mitigation plan uses the same techniques and methods used to create open water habitat that would be impacted by the proposed action and/or that has created open water elsewhere on the property that will not be impacted.

5.1.2. MESQUITE DOMINATED RIPARIAN HABITAT

The nature and type of habitat that will be created/enhanced for this project already occurs as High Density Mesquite Dominated Riparian Habitat adjacent to portions of the proposed Sunflower Ranch mitigation site. This habitat appears, based upon our current understanding of the depth to groundwater at the site (ranging from approximately 27 to possibly as much as 35 feet) as well as the structure and size of existing plant communities

in the project area, to not be dependent upon a shallow (typically less than 16.5 feet below surface elevation) alluvial aquifer.

Groundwater elevations in the vicinity of Sunflower Ranch are subject to a fairly high degree of fluctuation. At the end of the 1992 drought cycle groundwater elevation ranged from 27 to 34 feet below ground surface. After the 1993 flood, depth to groundwater was as shallow as five-feet. Groundwater quality from the one well sampled within the mitigation site (near the eastern edge of the horse pasture) was acceptable for mitigation purposes with near neutral pH. Generally, the mitigation site appears to be separated from poor quality groundwater in the alluvial aquifer of Pinal Creek by clay dominated, calcareous alluvial deposits. The decision to not use the irrigation well on site was made to limit the potential for acidic water to move towards the existing irrigation well.

Hydrologically, mesquite dominated habitats in the project area appear to be dependent upon the intermittent watering of the vadose zone in Pinal Creek associated with ephemeral flows. With utilization of an irrigation regime that facilitates deep root growth, the planted trees will be well established and able to utilize the ephemeral water resources of the vadose zone along this portion of Pinal Creek.

5.1.3. WETLAND HABITAT

The creation of wetland habitat along the margins of the Webster Impoundment is not as certain as the success of other mitigation elements proposed. The relatively small amount of wetland to be created (<2,750 square feet), variations in contour creating varied microhabitats within the 25 to 50 percent inundation zone, and the exclusion of cattle from this area all increase the probability for success. Because wetland habitats that will require mitigation will not be impacted for seven years⁵ following project authorization, there is ample time to monitor the development of aquatic and wetland habitat at the Webster Impoundment. This monitoring effort will allow CMMC to develop a better understanding of the likelihood of establishing wetlands along the margins of the impoundment and to identify specific activities to increase the probability for success.

5.1.4. MIXED BROADLEAF RIPARIAN HABITAT

The creation of cottonwood/ash dominated riparian habitat will occur at the north end of the proposed Sunflower Ranch mitigation area. Presently there are several mature cottonwood trees growing within this area. The proposed irrigation regime to facilitate deep root growth will increase the probability for plant survival at this site.

⁵ Except for the approximately 2 percent of potentially impacted wetlands located at GMC which will be impacted in Year-3 of the expansion project.

5.2. RESPONSIBLE PARTIES

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5.3. SCHEDULE

Figure 6 depicts the project schedule. Contracts for nursery grown plant material will be executed upon approval of all project permits for the proposed action and initiation of construction activities. The contract-grown nursery material are expected to be available approximately six months after ordering. Irrigation construction and planting will be initiated as contract-grown plant material becomes available. The monitoring period will last for approximately five years at the Sunflower Ranch site and for approximately seven years at the Webster impoundment site. Monitoring will continue at Sunflower Ranch, once every five years, until completion of the post closing period (ca. 2026) for the CMMC Leach Expansion project.

5.4 SITE PREPARATION

The construction and development of the Webster Impoundment is described in detail in the CMMC Leach Expansion project Plan of Operations submitted to the BLM and TNF and described in the project's DEIS. Additional site preparation at the Webster Impoundment will be limited to fencing that excludes cattle.

Site preparation at Sunflower Ranch will include fence construction and removal of exotic vegetation. Existing fencing at the Sunflower Ranch site will be modified so that approximately 30 acres will be excluded from cattle grazing. Exotic tree and shrub species (*Tamarix* sp. and *Ailanthus* sp.) will be removed from the Sunflower Ranch mitigation site prior to planting and controlled during the five year establishment period.

5.5. PLANTING PLAN

Figures 7a & b depict the conceptual irrigation and planting plans for the Sunflower Ranch mitigation site. All of the vegetation used for mitigation will be nursery grown, plant material. The nursery grown material will be cultivated using tall pots (Figure 8). The tall pot containers will allow plants to form an approximately 30" long root mass. This method is expected to facilitate deep root development, wean the plants from supplemental mitigation, and enhance plant survivability. Mesquite seed collected from Pinal Creek and other areas removed from urban centers will be utilized. All planted trees will be have three foot high chicken or welded-wire fencing placed around them to minimize the risk of predation. The diameter of these fenced enclosures will be approximately 2.5 to 3 feet. Table 3 summarizes the number and type of trees to be planted at the site. CMMC may elect to plant additional trees, in excess of the 582 indicated in Table 3. The planting of additional trees will not alter the success criteria (402 living trees five-years after planting) established in Section 3.2.2.

For habitat creation areas the plan shows a regular planting pattern. The placement of trees in the field will be adjusted to avoid regular rows and spacings.

Figure 11 depicts roadways, existing powerlines, the well location, the proposed fence line, and the proposed LPC pipeline route. Roads, the fenced line, and other utility corridors depicted on the drawing will be maintained to provide adequate access for operation and maintenance.

Table 3. Number and Type of Trees to be Planted at the Sunflower Ranch Mitigation Site.

Species	Quantity
Mesquite (<i>Prosopis velutina</i>)	417
Desert Willow (<i>Chilopsis linearis</i>)	18
Netleaf Hackberry (<i>Celtis reticulata</i>)	15
Desert Hackberry (<i>Celtis palida</i>)	18
Wolfberry (<i>Lycium thornberrii</i>)	16
Mexican Elderberry (<i>Sambucus neomexicana</i>)	18
Fremont Cottonwood (<i>Populus fremontii</i>)	56
Arizona Ash (<i>Fraxinus velutina</i>)	24
TOTAL	582

* As outlined in section 3.2.2, mitigation requirements for the project are met through mesquite dominated riparian habitat creation and enhancement. The 80 trees in the cottonwood/ash habitat type are not subject to the 80% survival requirement.

5.6. IRRIGATION PLAN

The irrigation schedules for Mesquite dominated and Mixed broadleaf riparian habitat (summarized in tables 4 and 5 and graphically depicted in Figures 9 and 10 were designed to: 1) provide sufficient water to insure initial plant survivorship, particularly after first planting and during the summer; and 2) facilitate deep root growth. This is achieved by varying the depth of water applied and the amount of available water depleted from the root zone between irrigations (allowable depletion).

To meet initial survivorship requirements, enough water will be provided during the first two years to meet all of the plant's water needs. We estimated that mesquite would use 2 acre-feet of water per acre per year⁶, and the cottonwood/ash habitat would use 6 acre-feet of water per acre per year. This was proportioned for each month using daily potential evapotranspiration data for the Globe area. Prior to planting, the irrigation system

⁶ Estimates are based upon published data regarding water use by mesquite and data provided by the Pima County Agricultural Extension office. These data were then adjusted based upon the estimated size (proportional canopy area) of mesquite during the irrigation period. It is likely that the irrigation schedule proposed overestimates water demand during the irrigation period, thus increasing the maximal depths of irrigation.

will be run for an extended period to deepwater the site. During the initial summer season, following planting, allowable depletion is small (30% to 40%) to minimize plant stress and facilitate growth and establishment.

To achieve deep root growth, allowable depletion will gradually increase over the two-year irrigation period eventually reaching 70%. As water becomes depleted near the top of the soil column, the plant will get water from deeper in the soil. To ensure that deep-water is available, each irrigation is designed to provide some deep-percolation below the root-zone. The goal is to irrigate to at least fifteen feet below the surface. Finally, at the end of the two-year irrigation period, another deep irrigation will provide water for the third summer during which no additional supplemental irrigation is planned.

The schedule is based on plantings occurring in May. If plantings occurred at a different time the irrigation schedule would be modified accordingly.

Table 4. Irrigation Schedule for Sunflower Ranch-Mesquite dominated riparian habitat (assumes May planting). Set time is the duration of each irrigation event, irrigation amount is reported as inches per unit area, depth of the wetted zone is the estimated depth of the irrigation event, and allowable depletion determines the irrigation interval based upon estimated ET. Prior to planting the site will be irrigated for an extended period of time to create a wetted zone approximately 15 feet deep. Calculations assume a soil water holding capacity of 1.25"/foot

Quarter (3-month period)	Irrigation Interval (days)	Set Time (hours)	Irrigation Amount (inches)	Depth of Wetted Zone (feet)	Allowable Depletion (percent)
1	4	4	4.0	3.8	10-30%
2	14	6	5.4	4.3	30-40%
3	56	7	5.7	4.6	50%
4	39	8	6.1	4.9	40-50%
5	16	8	6.5	5.2	40-50%
6	24	9	6.8	5.4	40-50%
7	88	11	7.2	5.7	50-60%
8	67	14	7.5	6	60-70%

Table 5. Irrigation Schedule for Sunflower Ranch-Mixed broadleaf riparian habitat (assumes May planting). Set time is the duration of each irrigation event, irrigation amount is reported as inches per unit area, depth of the wetted zone is the estimated depth of the irrigation event, and allowable depletion determines the irrigation interval based upon estimated ET. Calculations assume a soil water holding capacity of 1.25"/foot

Quarter (3-month period)	Irrigation Interval (days)	Set Time (hours)	Irrigation Amount (inches)	Depth of Wetted Zone (feet)	Allowable Depletion (percent)
1	2	10	7.6	6.1	10-30%
2	9	18	10.6	8.4	30-40%
3	43	29	13.5	10.8	50%
4	39	36	16.4	13.1	40-50%
5	18	38	19.3	15.5	40-50%
6	28	49	22.2	17.8	40-50%
7	109	66	25.2	20.2	50-60%
8	93	86	28.1	22.5	60-70%

6. MAINTENANCE DURING MONITORING PERIOD

6.1. MAINTENANCE ACTIVITIES

Maintenance activities for each of the two mitigation areas are briefly described below.

6.1.1. WEBSTER IMPOUNDMENT MITIGATION SITE

Maintenance activities at this mitigation site will be limited to monitoring and repair of the four strand barbed wire fence that will be placed around the impoundment to exclude cattle from this mitigation area.

6.1.2. SUNFLOWER RANCH MITIGATION SITE

The following maintenance activities will occur on a regular basis at the Sunflower Ranch mitigation site.

1. Monitor and repair the mitigation site boundary fence, as needed.
2. Monitor and repair wire tree baskets as needed.
3. Monitor and repair the irrigation system as needed.

A more detailed description of these activities is provided in the maintenance schedule provided below.

6.2. RESPONSIBLE PARTIES

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6.3. SCHEDULE

Table 6 summarizes specific maintenance activities and their anticipated frequency at the Sunflower Ranch site. The Webster Impoundment fence will be inspected annually, unless cattle or sign are detected during routine monitoring of the impoundment facility.

System/Item	Description
Fencing	
Boundary Fence	During every site visit (to correspond with irrigation maintenance schedules) maintenance personnel shall be instructed to look for evidence of cattle use of the mitigation area. In addition the boundary fence will be walked and visually inspected once a year. Fence maintenance shall be performed as needed.
Wire Tree Baskets	Wire tree baskets will be inspected and maintained on regular basis. The inspection schedule will correspond to irrigation maintenance activities.
Irrigation	
Filters	Irrigation filters shall be inspected and cleaned on a quarterly basis or more frequently if needed.
Emitters	Emitters to all trees will be visually inspected while the system is working on a monthly basis throughout the growing season. As irrigation frequency diminishes, emitter inspections will be completed during each irrigation session.
Clocks and Distribution System	These systems will be inspected on the same schedule as the emitters.

7. MONITORING

7.1. SUNFLOWER RANCH MITIGATION SITE

During the course of operations, detailed records of the timing and duration of irrigation events will be maintained. Twenty percent of the trees will be tagged for monitoring purposes. After planting, at the end of the first growing season, and at the end of each subsequent growing season for three additional years, tree size

(canopy diameter and height) will be measured for each of the tagged trees. Permanent photo points (no less than 5) will be established within or adjacent to both creation and enhancement areas.

Trees will be monitored on an annual basis for the first five years to insure that a statistically significant increase in tree size (canopy diameter and height) from year to year occurs while irrigation takes place. Upon cessation of supplemental watering, (year 4 is the first growing season with no supplemental irrigation planned), a statistically significant increase in tree size may not occur and we would monitor to insure no die-back (reduction in size) has taken place. Subsequent monitoring will occur every 5 years until the post closure period for the CMMC Leach expansion project is completed.

7.2. WEBSTER IMPOUNDMENT MITIGATION SITE

The Webster Impoundment mitigation site will be monitored annually for seven years. Monitoring will include compilation of impoundment water elevation data, rainfall at the mine (to correspond with pond elevations), and documentation of the development of jurisdictional waters including wetlands along the impoundment fringe. Photo-documentation will be provided from several permanent locations that will be identified and documented within the first monitoring report submitted to the ACOE. One picture will be from the top of the impoundment embankment looking west down on to the impoundment. Other points (a minimum of four) will be established slightly above and looking along the 25 percent probability elevation (ca. 4,263 ft. above msl).

No specific annual performance criteria are proposed. This site requires establishment of a site specific hydrologic regime. This regime is dependent upon high frequency storm events and cannot be quantitatively predicted with a reasonable degree of precision using traditional techniques.

7.3. ANNUAL REPORTING

Three copies of an annual report detailing the results of monitoring activities and containing color photo copies of photos taken from each of the permanent photo points will be submitted to the ACOE.

7.4. REPORTING SCHEDULE

On the first of November, monitoring reports will be submitted to the ACOE Regulatory Branch office in Phoenix, Arizona, for the initial 5 years of the project. Thereafter, a report will be submitted every 5 years until the post closure period for the CMMC Leach expansion project is completed.

8. NOTIFICATION OF COMPLETION

Notification of completion may be made jointly or separately for the two mitigation sites. Notification will be provided with the submittal of the Monitoring Report to the ACOE by CMMC. This notification shall be clearly stated in the cover letter and within the body of the document.

9. CONTINGENCY MEASURES

9.1. INITIATING PROCEDURES

Success or failure to achieve the mitigation objectives identified for the Webster Impoundment Mitigation Site will be identified in the six year monitoring report submitted to the ACOE. In this report CMMC will identify the degree of success achieved, the likely causes for failure, and proposed measures that will be implemented to achieve project success. The transmittal letter submitted with this report will request that the ACOE contact CMMC's authorized representative to set a meeting date to review the contents of the report and to establish a schedule for development and implementation of contingency measures.

Based upon the current schedule outlined in previous sections, CMMC shall submit a monitoring report at the end of the four and five year growing seasons that summarizes the survival rate of planted trees in habitat creation and enhancement areas at Sunflower Ranch. At this time, based upon the current irrigation schedule proposed, all trees are expected to have completed one and then two full years without supplemental irrigation. Success or failure to achieve establishment criteria and the need to evaluate or initiate certain actions will be identified in each of these reports.

9.2. ALTERNATIVE LOCATIONS FOR CONTINGENCY MITIGATION

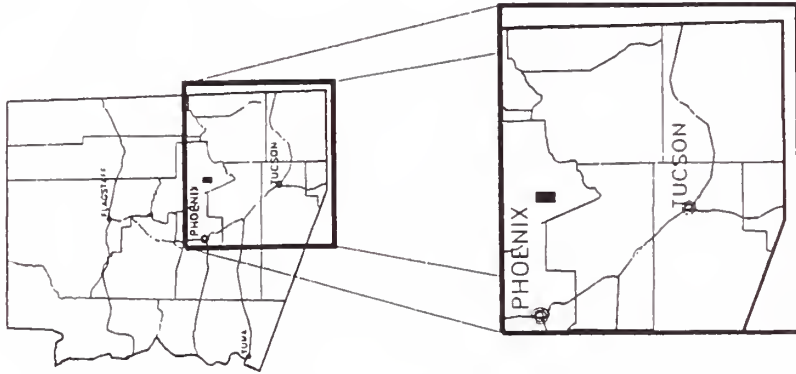
Correction of the foreseeable causes for not achieving the success criteria outlined in previous sections, such as irrigation failure at the Sunflower Ranch mitigation site or excessive fluctuations in impoundment elevation at the Webster Impoundment, are not likely to require utilization of alternative mitigation locations. Should any problems arise that require implementation of contingency measures on other than the proposed mitigation sites CMMC will coordinate with the ACOE.

9.3. FUNDING MECHANISM

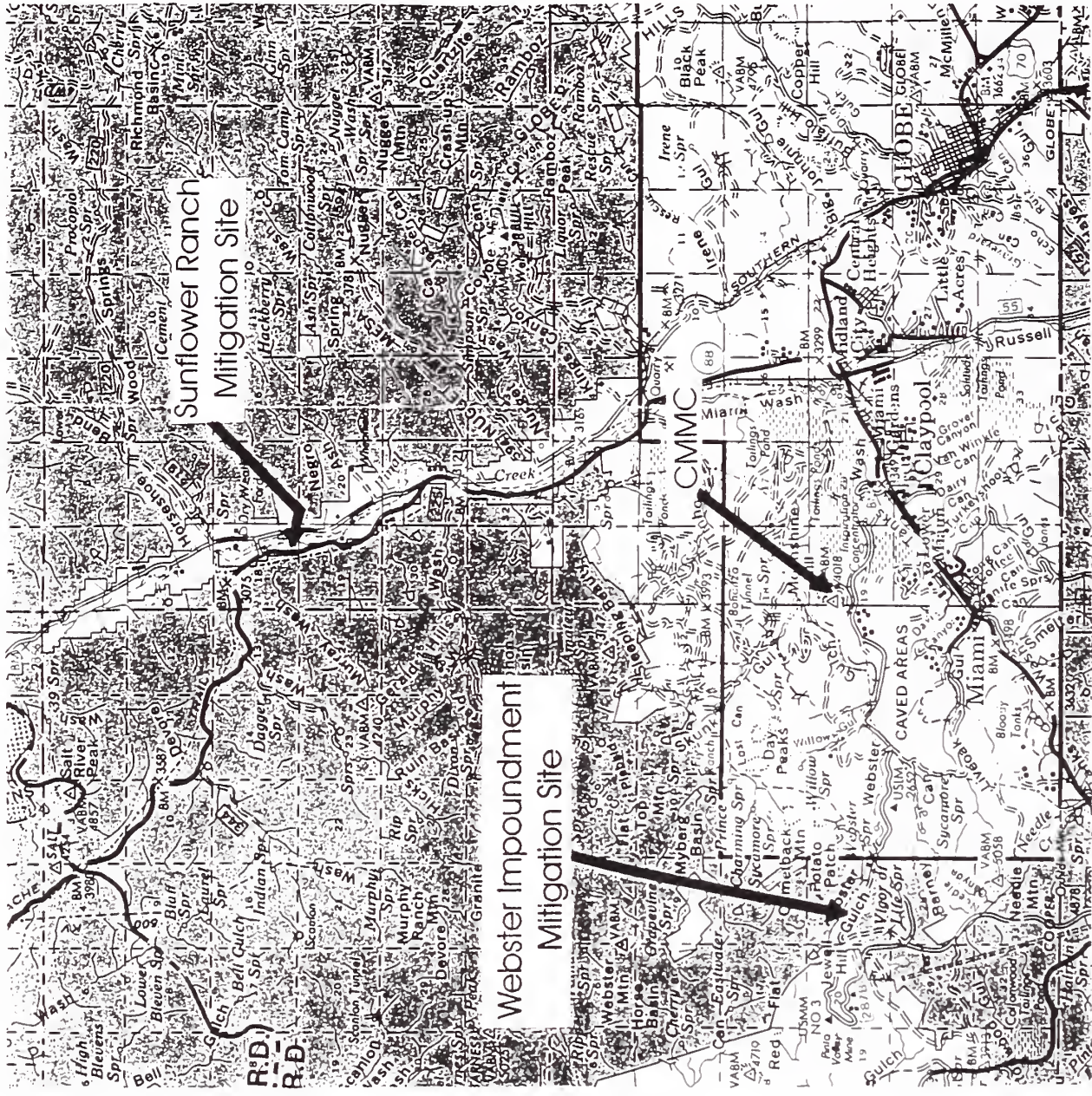
CMMC possess the financial and administrative resources necessary to fund implementation of foreseeable contingency measures.

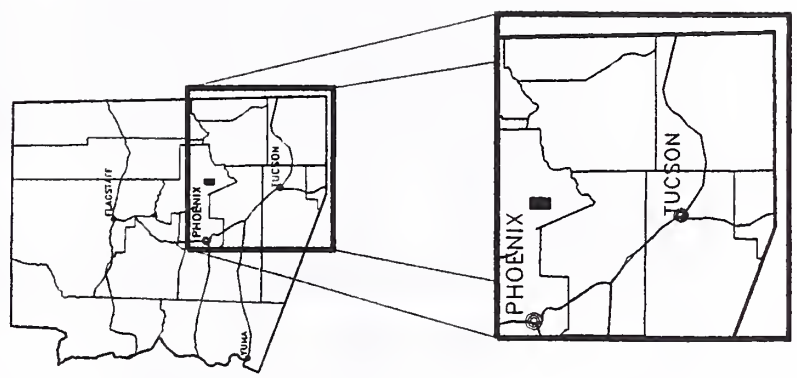
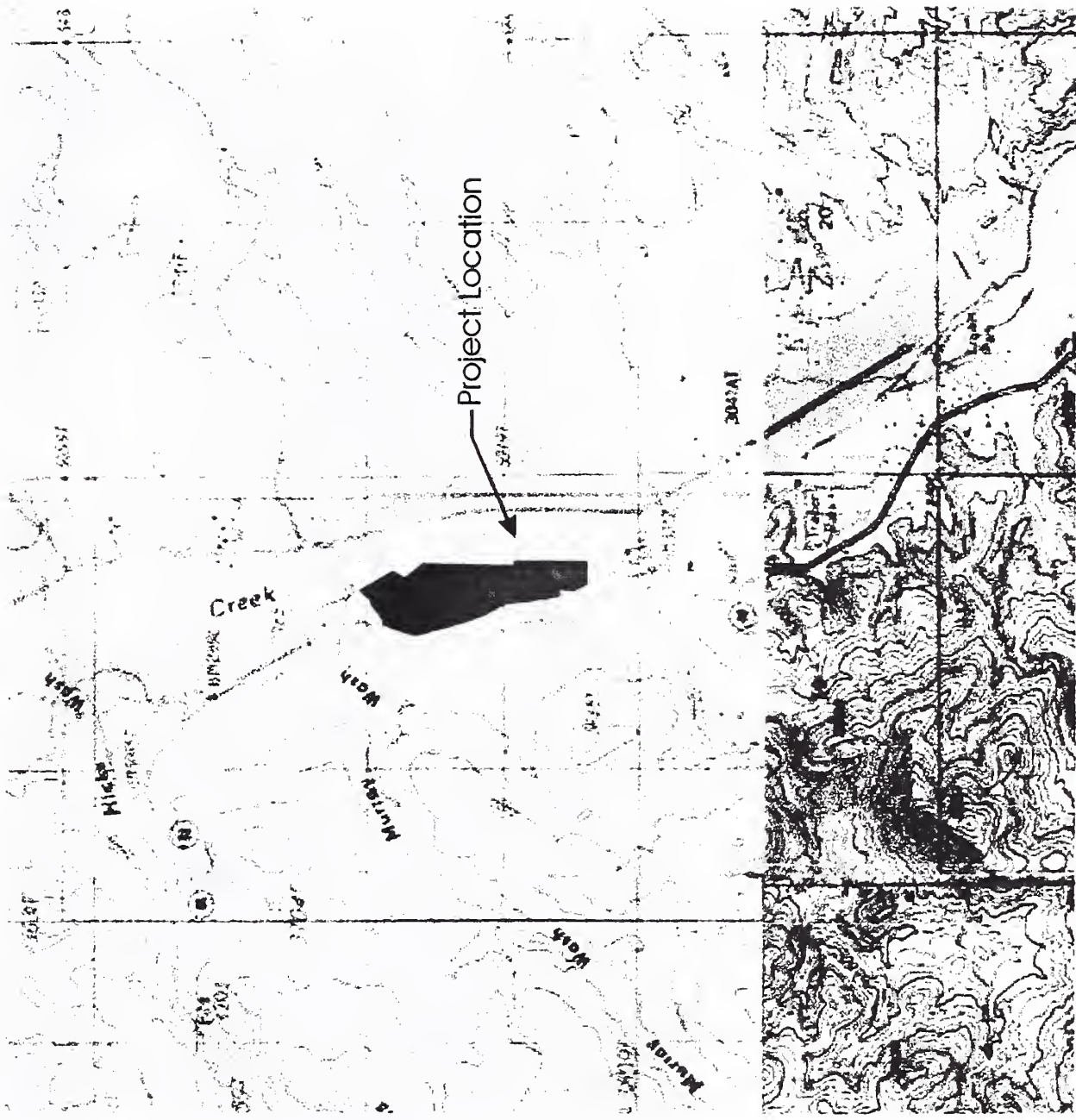
9.4. RESPONSIBLE PARTIES

Mr. Jay Spehar, Senior Landman
CYPRUS MIAMI MINING CORPORATION
P.O. Box 4444
Claypool, Arizona 85532
Phone: (520) 473-7161 Fax: (520) 473-7473



N 0 1 2 4 miles





Cyprus Miami Mining Corporation
 Leach Facilities Expansion Project
 Sunflower Ranch Mitigation Site Location

Figure
 2

WestLand Resources, Inc
 Engineering and Environmental Consultants
 2343 E. Broadway Blvd., Suite 202 Tucson, Arizona 85719
 520.306.9686 Fax 520.306.9618

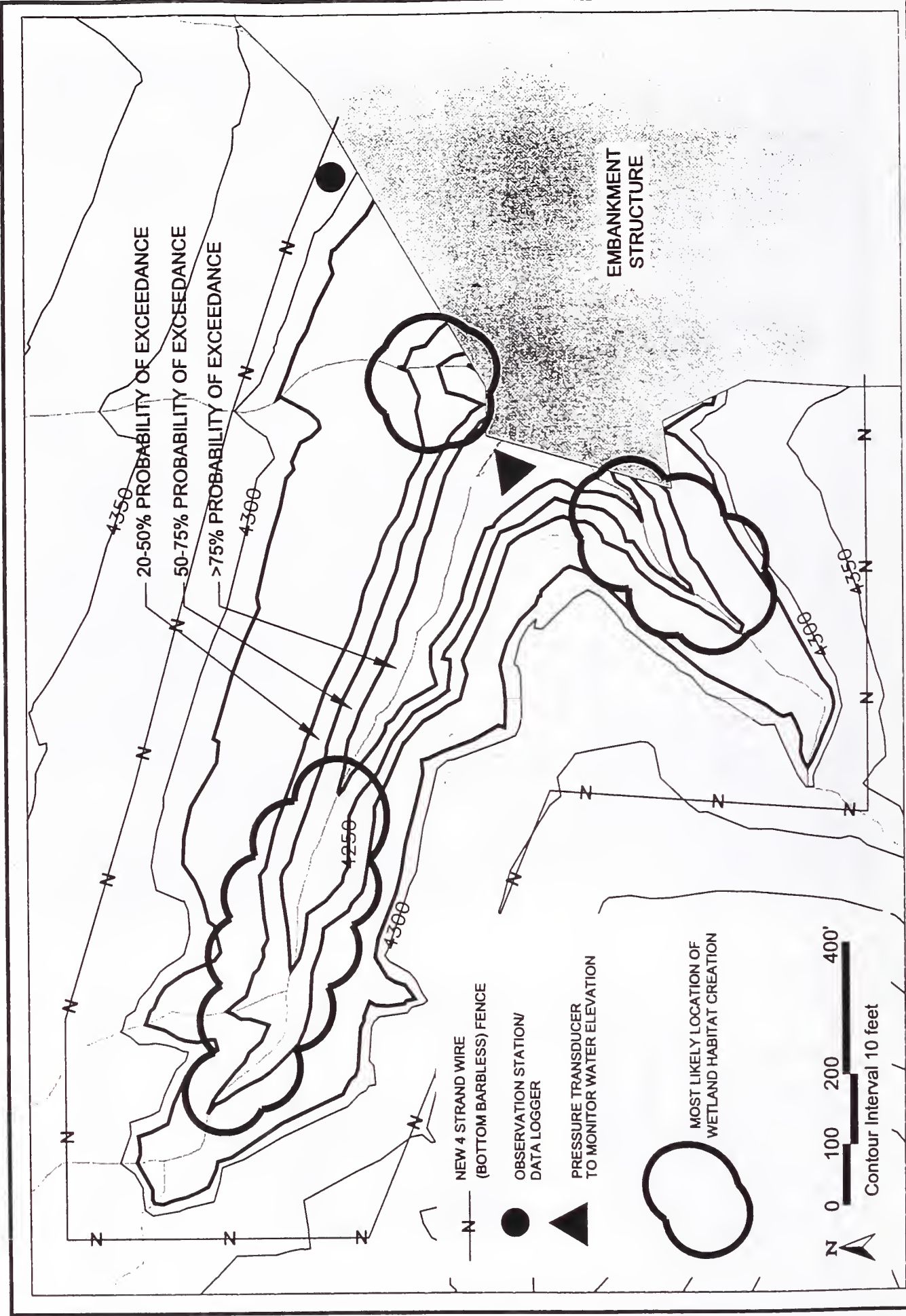
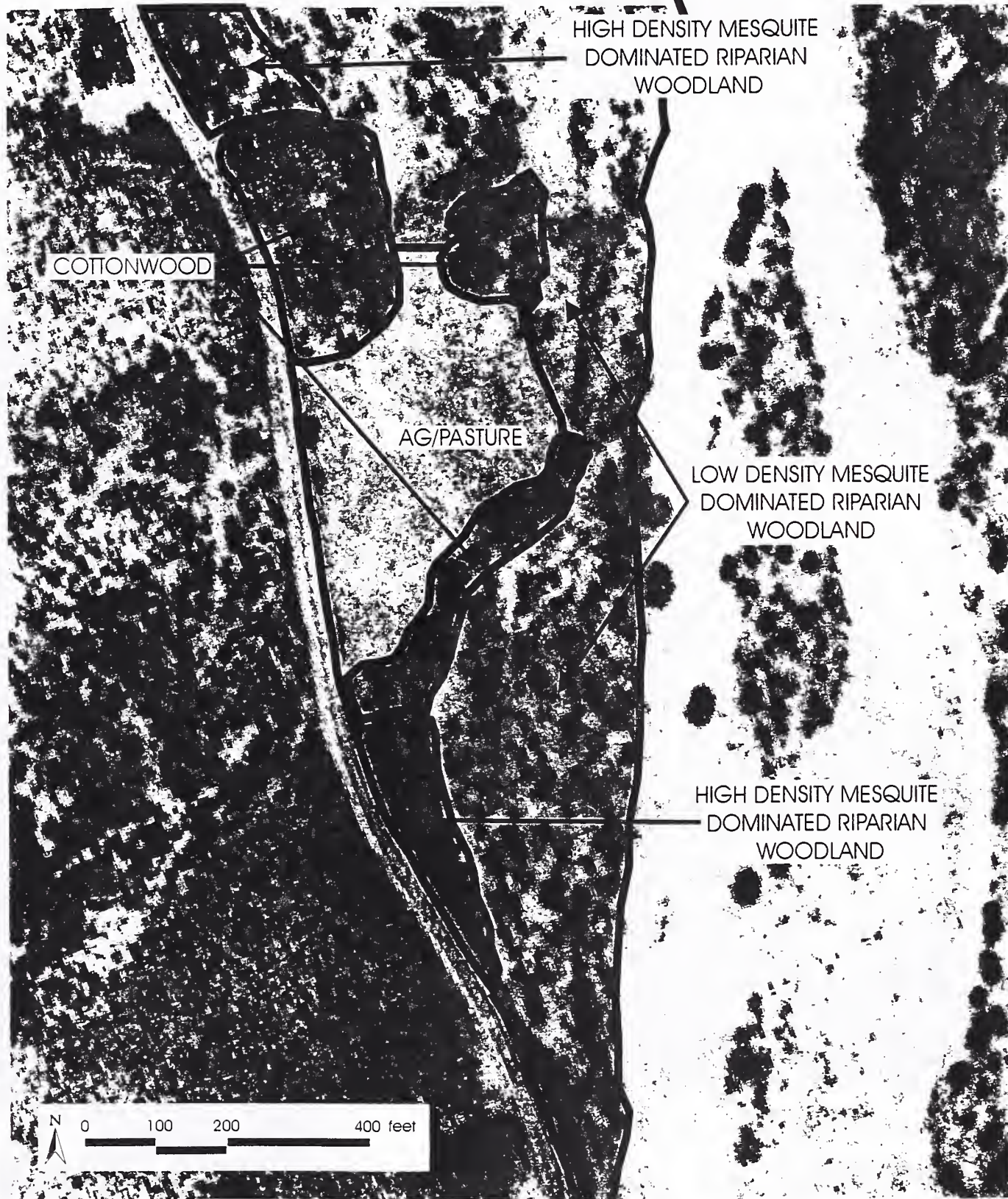


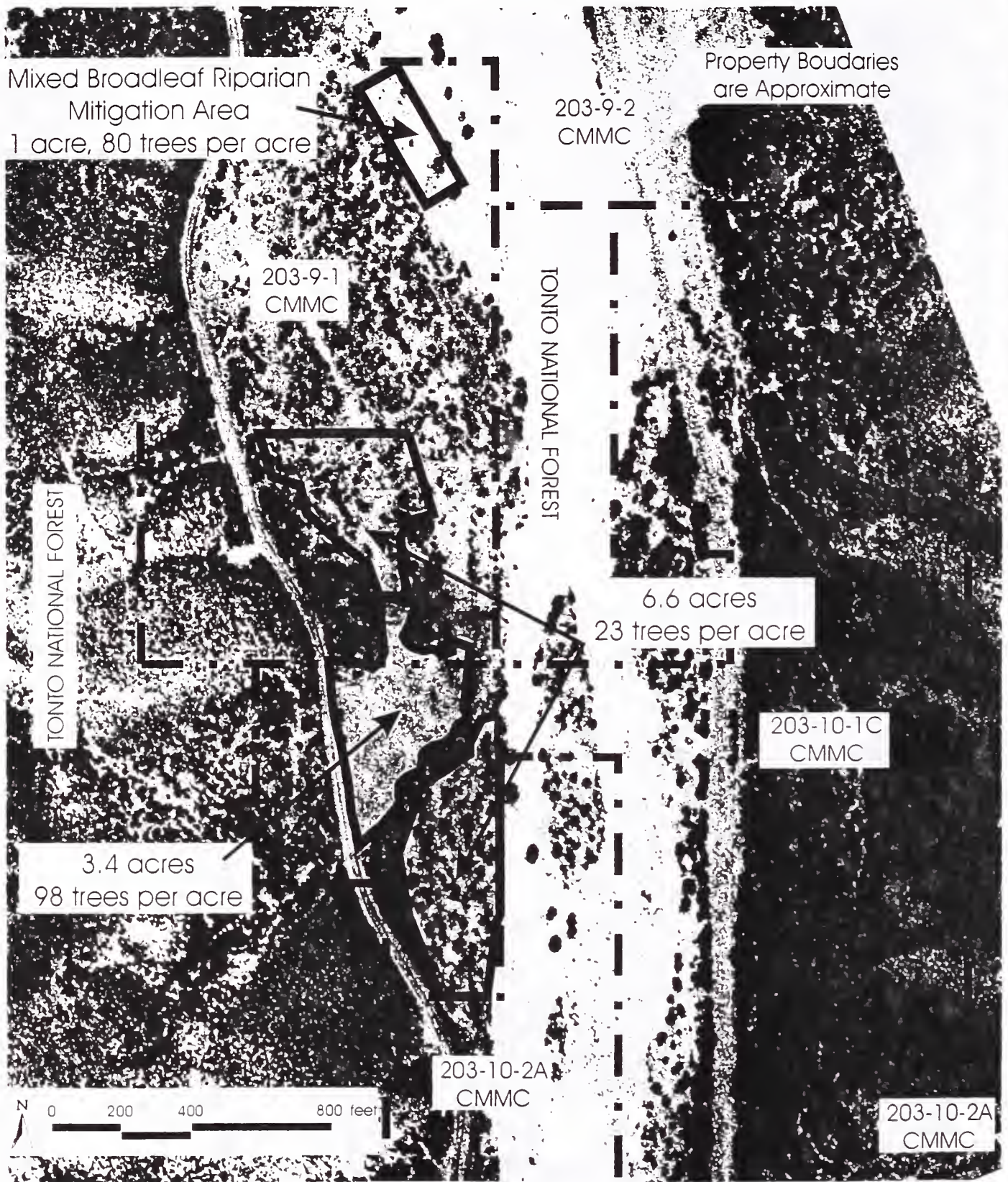
Figure 3



WestLand Resources, Inc
Engineering and Environmental Consultants
2343 E Broadway Blvd., Suite 202 Tucson, Arizona 85719
520 206 9585 Fax 520 206 9518

Figure
4

Cyprus Miami Mining Corporation
Leach Facilities Expansion Project
HMMP Mitigation Area Vegetation Communities

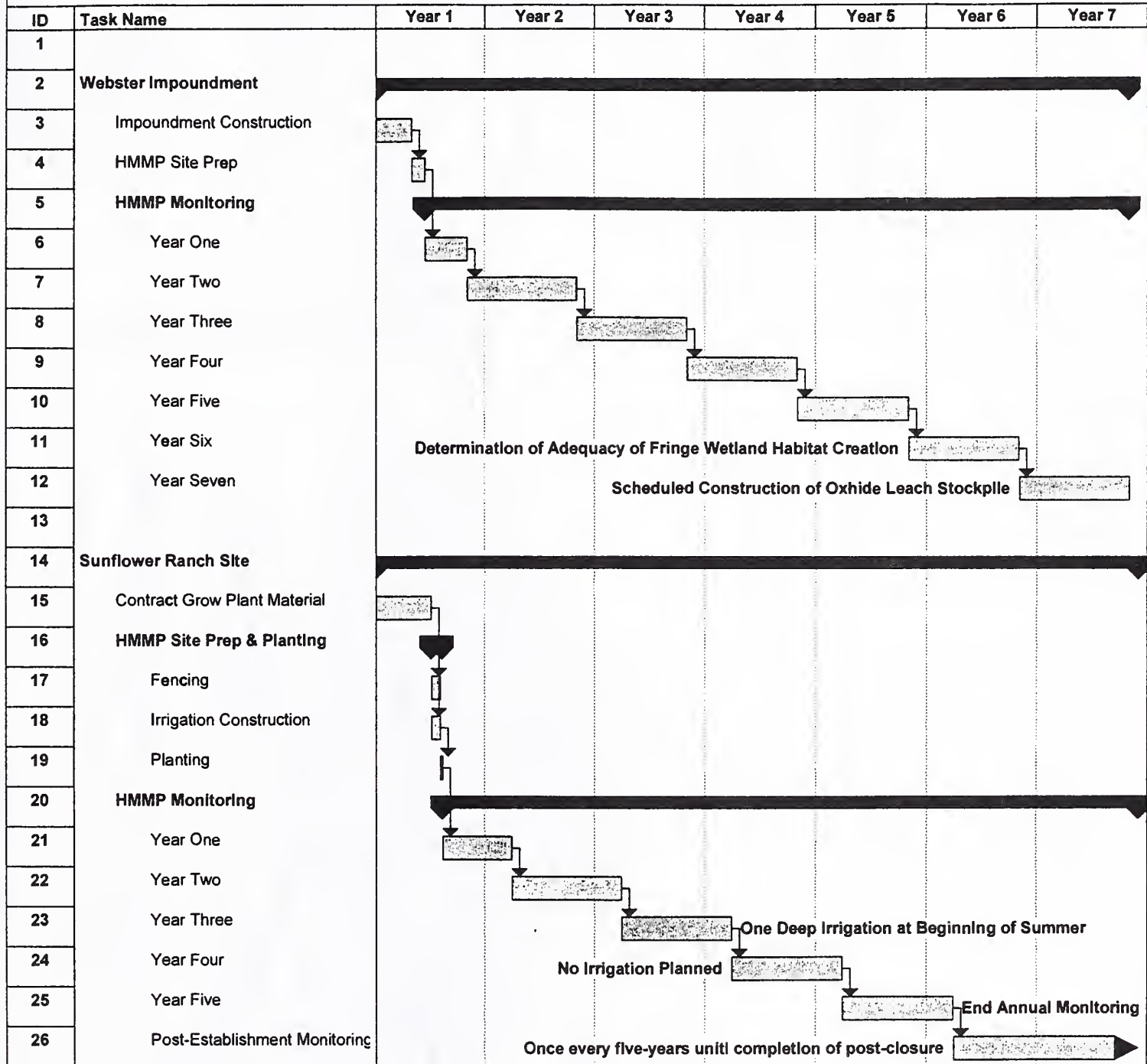


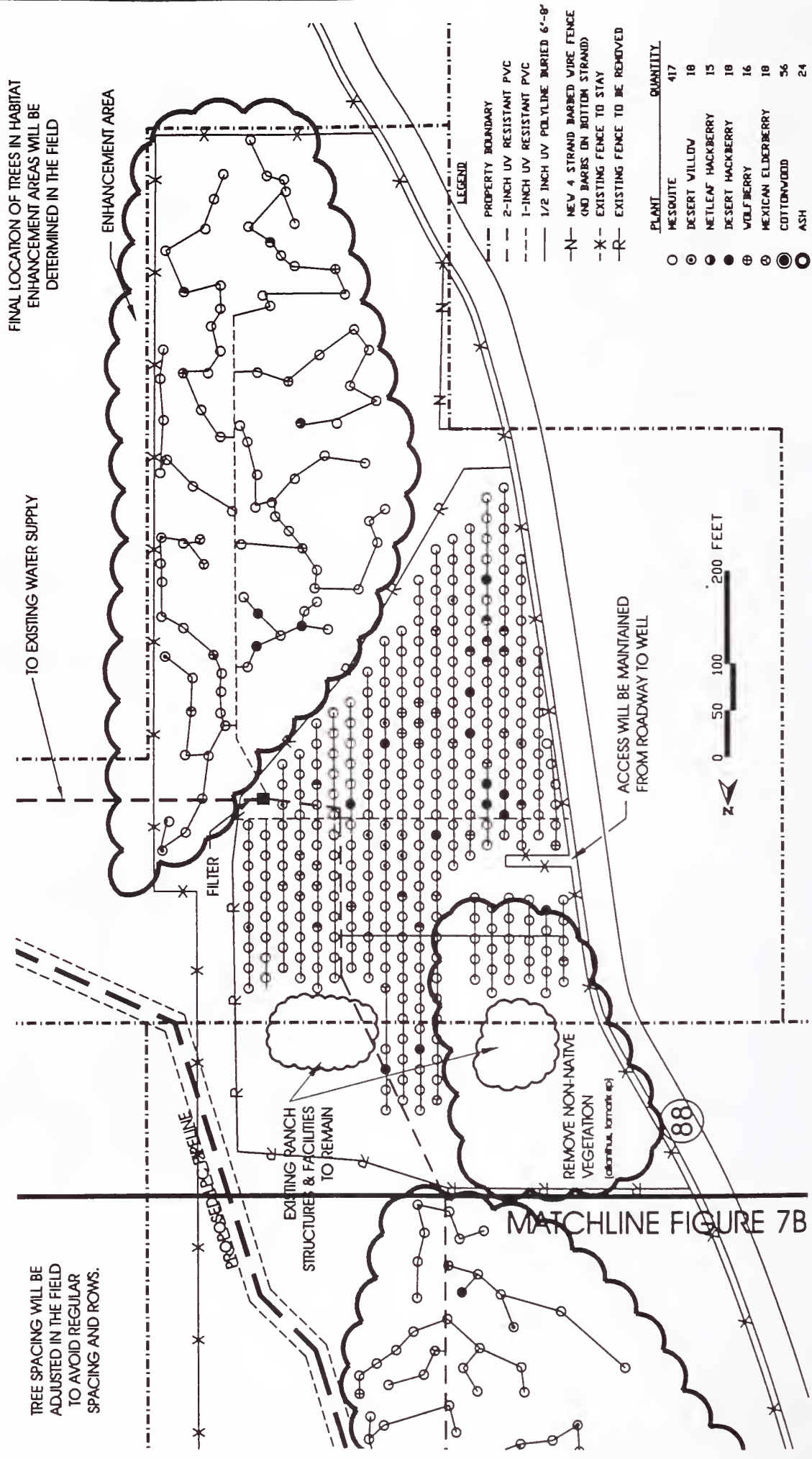
WestLand Resources, Inc
 Engineering and Environmental Consultants
 2343 E Broadway Blvd., Suite 202 Tucson, Arizona 85719
 520 206 9585 Fax 520 206 9518

Figure
5

Cyprus Miami Mining Corporation
 Leach Facilities Expansion Project
 Property Ownership – Sunflower Ranch Mitigation Site

**FIGURE 6. Cyprus Leach Expansion Project
CWA Section 404 Habitat Mitigation and Monitoring Plan Schedule**





TREE SPACING WILL BE ADJUSTED IN THE FIELD TO AVOID REGULAR SPACING AND ROWS.

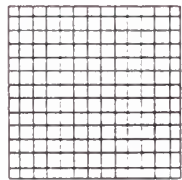
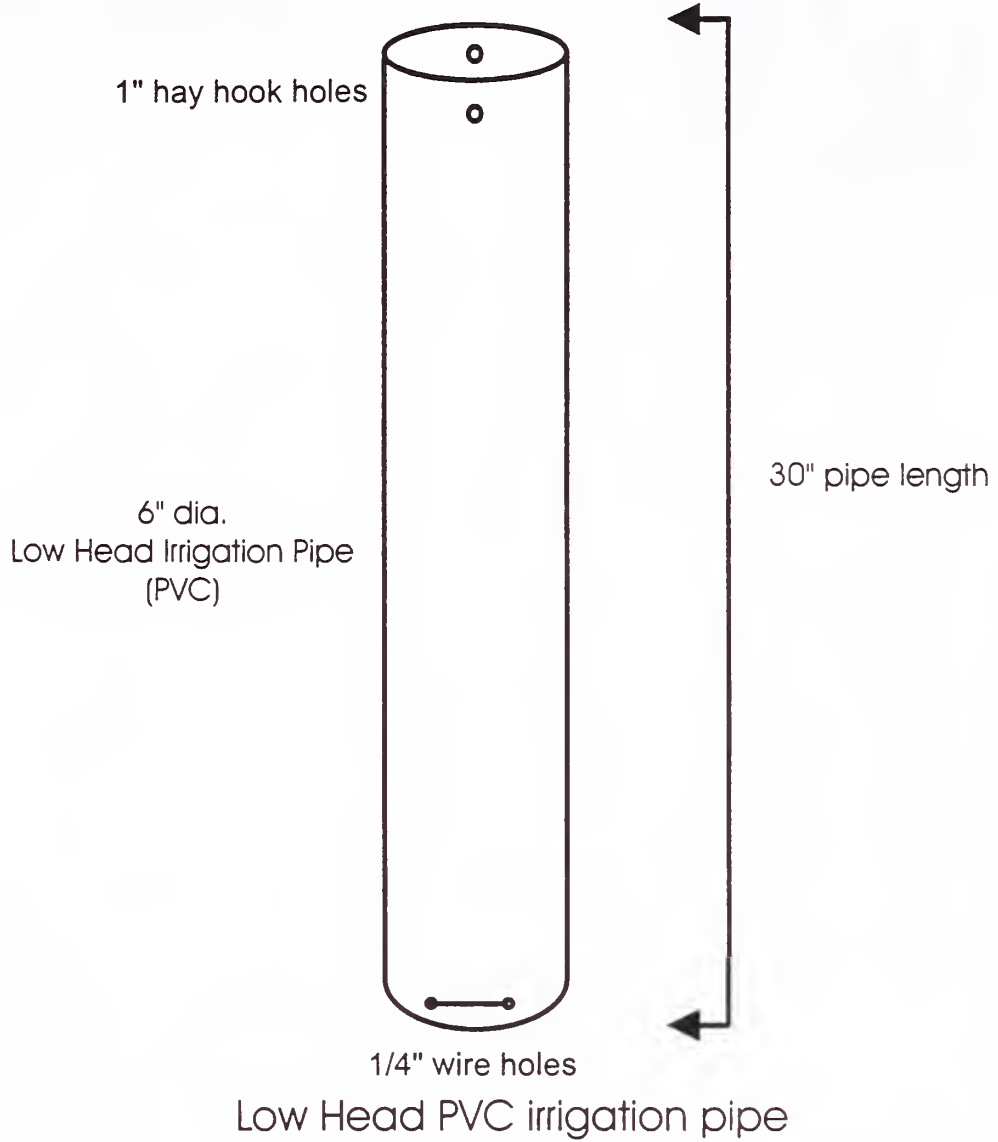
PRELIMINARY
NOT FOR CONSTRUCTION

Westland Resources, Inc.
Engineering and Environmental Consultants
1800 N. 202nd Ave.
Phoenix, AZ 85024
Tel: 602-998-5200
Fax: 602-998-1818

Figure

IRRIGATION

CYPRUS MIAMI MINING CORPORATION
LEACH FACILITIES EXPANSION PROJECT



Use 6 1/2" by 6 1/2"
window screen for
bottom support screen



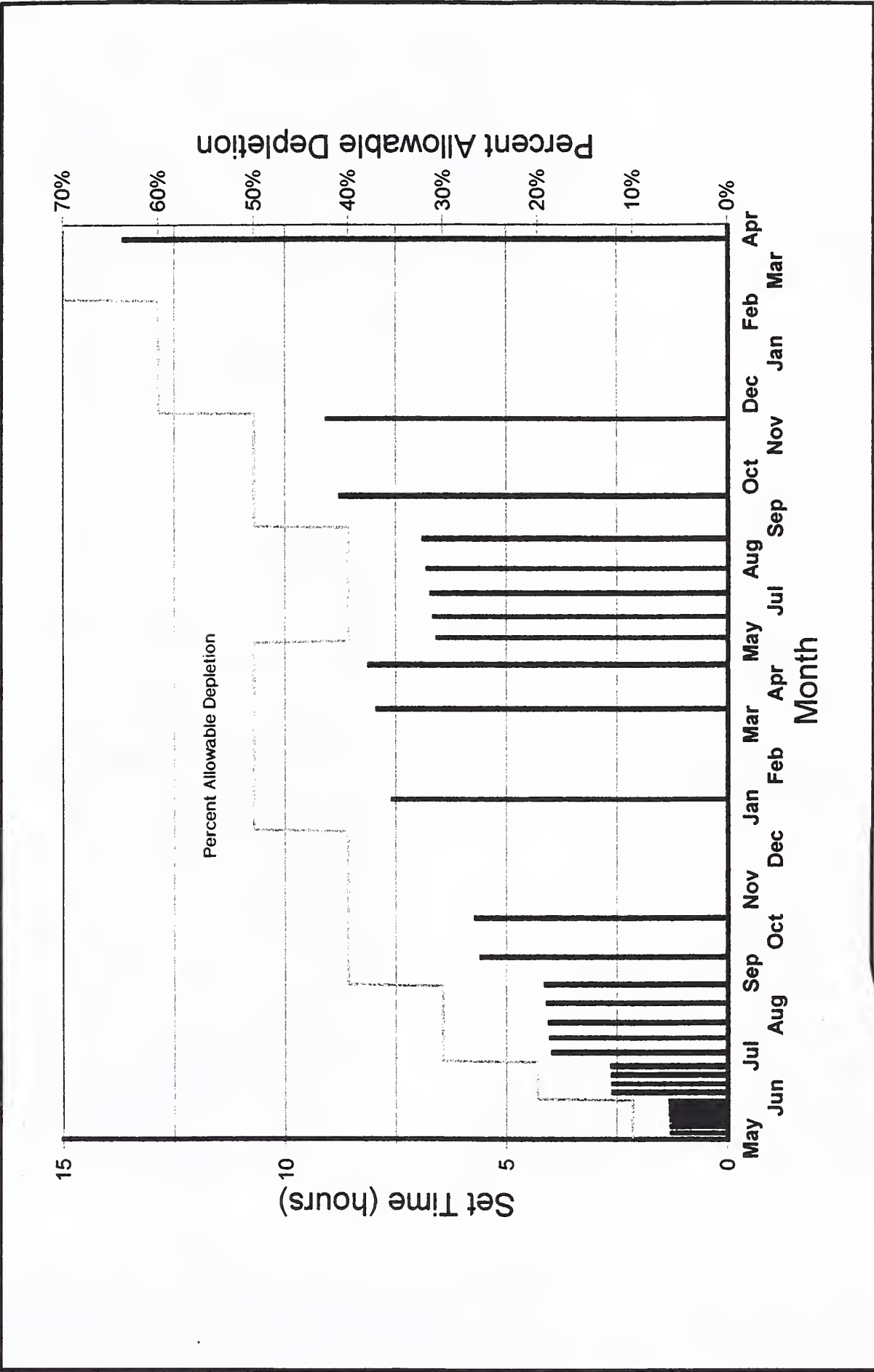
Weave wire across
bottom opening to
hold in support screen

Cyprus Miami Mining Corporation
Leach Facilities Expansion Project

WestLand Resources, Inc
Engineering and Environmental Consultants
2343 E Broadway Blvd., Suite 202 Tucson, Arizona 85719
520.206.9565 Fax 520.206.9518

Figure
8

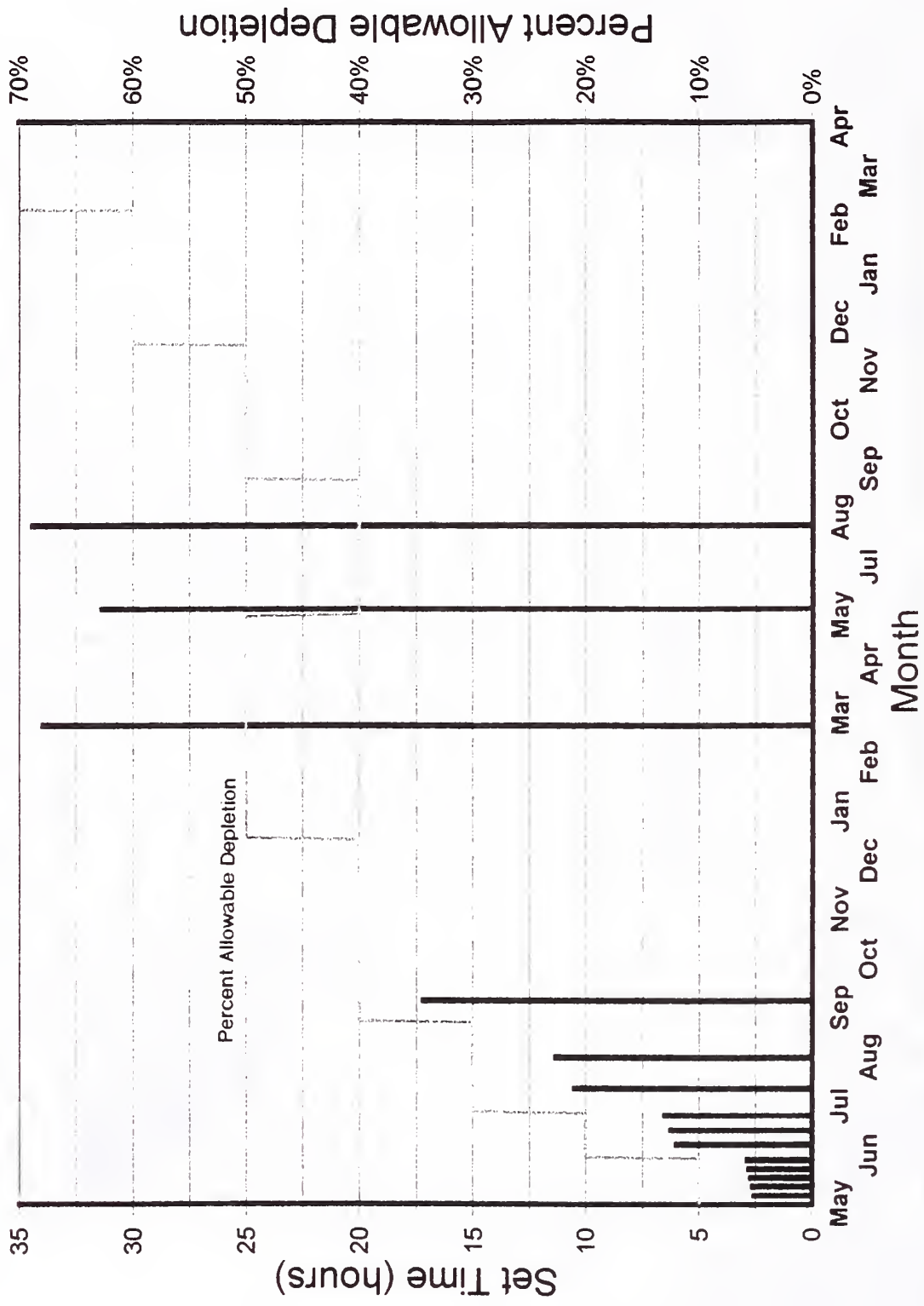
Tall Pot Design



WestLand Resources, Inc
 Engineering and Environmental Consultants
 2348 E Woodway Blvd, Suite 207
 520.206.9585 Fax 520.206.9516

Figure 9

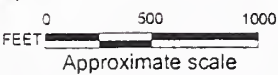
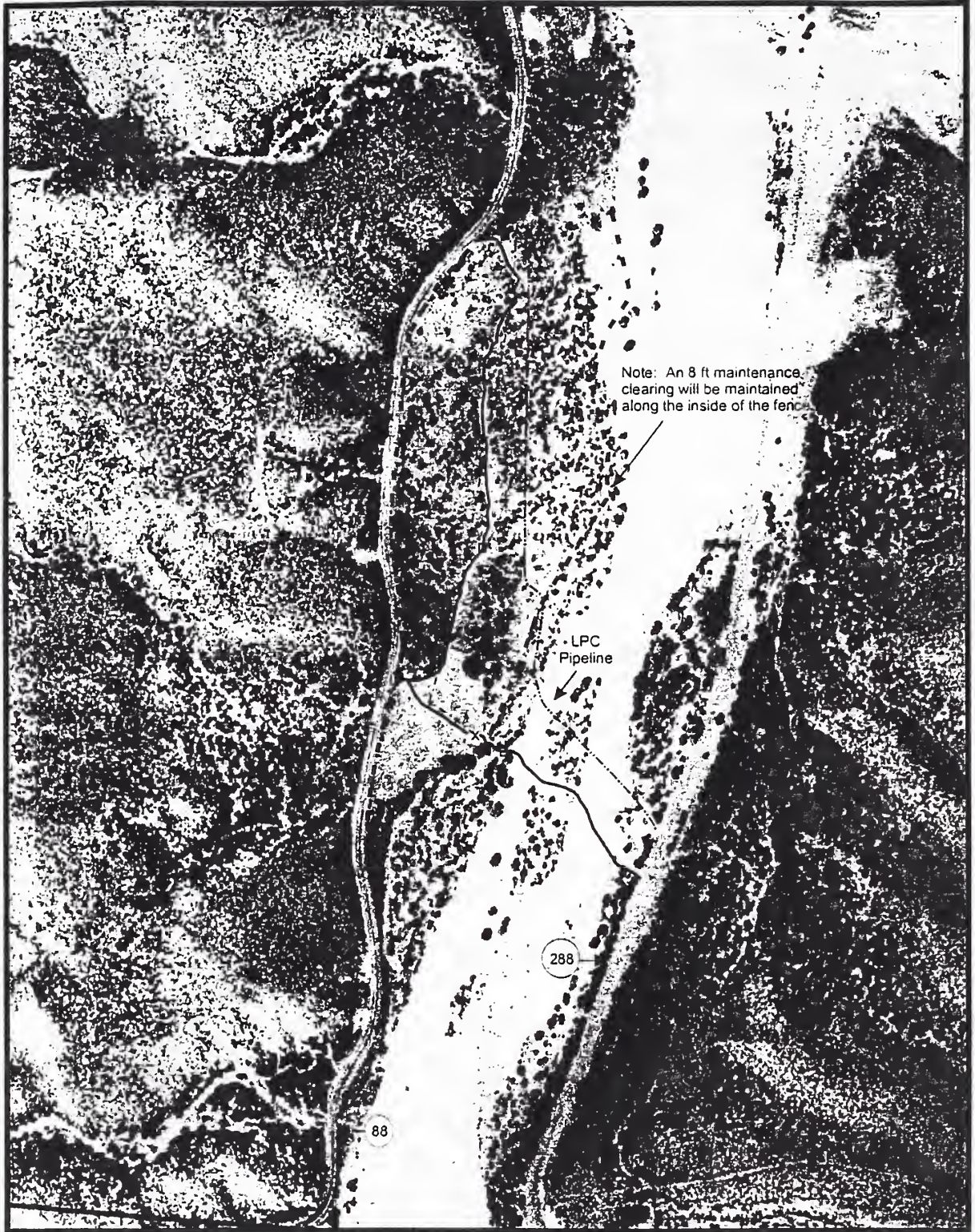
Cyprus Miami Mining Corporation
 Leach Facilities Expansion Project
 Irrigation Schedule
 Mesquite Dominated Riparian Habitat



Cyprus Miami Mining Corporation
 Leach Facilities Expansion Project
 Irrigation Schedule
 Mixed Broadleaf Riparian Habitat

Figure
10

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 Engineering and Environmental Consultants
 2343 E. Broadway Blvd., Suite 202, Tucson, Arizona 85719
 520-206-7385 Fax 520-206-7318



- x Filter and Well
- * Power pole
- Proposed gate
- Existing access road
- - - - Power line
- · · · Proposed fence line
- · - · LPC Pipeline

Cyprus Miami Mining Corporation
Leach Facilities Expansion Project

Property access to be maintained after
HMMP implementation.

WestLand Resources, Inc.
Engineering and Environmental Consultants
2343 E Broadway Blvd., Suite 202, Tucson, Arizona 85719
520.206.9585 Fax 520.206.9518

Figure
11



APPENDIX B.

**MEMORANDUM OF AGREEMENT AMONG THE USDA
FOREST SERVICE, USDI BUREAU OF LAND MANAGEMENT,
US ARMY CORPS OF ENGINEERS, AND THE ARIZONA
STATE HISTORIC PRESERVATION OFFICER REGARDING
THE CYPRUS MIAMI LEACH FACILITY EXPANSION
PROJECT**



**MEMORANDUM OF AGREEMENT
AMONG
THE UNITED STATES DEPARTMENT OF AGRICULTURE FOREST SERVICE
THE UNITED STATES DEPARTMENT OF INTERIOR BUREAU OF LAND MANAGEMENT
THE UNITED STATES ARMY CORPS OF ENGINEERS
AND
THE ARIZONA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE
CYPRUS-MIAMI LEACH FACILITY EXPANSION PROJECT**

WHEREAS, the US Department of Agriculture Forest Service (FS), the US Department of Interior Bureau of Land Management (BLM), and the United States Army Corps of Engineers (Corps) have determined that the expansion of an existing copper mine on lands under the jurisdiction of the Tonto National Forest and the Phoenix Field Office of the BLM, hereafter known as the Cyprus-Miami Leach Facility Expansion Project, will have an Adverse Effect on properties included in or eligible for inclusion in the National Register of Historic Places, and have consulted with the Arizona State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (Council) pursuant to 36 CFR 800 regarding implementation of Section 106 of the National Historic Preservation Act, and

WHEREAS, FS, BLM, and Corps have agreed that FS, represented by Region 3, Tonto National Forest (TNF) as its agent, will assume lead responsibility for compliance under Section 106 of the National Historic Preservation Act (16 USC 470f) for issuance of permits for the development of lands and waters of the United States under Section 404 of the Clean Water Act, and

WHEREAS, an inventory of historic properties within the project area, including properties having traditional cultural or religious values, has been conducted in a manner consistent with the Secretary of the Interior's *Standards and Guidelines for Identification of Historic Properties*, National Register Bulletin 38, and the inventory standards and guidelines established by FS and BLM (Attachment A), and

WHEREAS, the Cyprus-Miami Mining Corporation has been identified pursuant to 36 CFR 800.1(c)(2)(ii) as an Interested Party to this undertaking and has been invited to participate in consultation and to concur in this Agreement, and

WHEREAS, the Fort McDowell Indian Community, the Hopi Tribe, the Salt River Pima-Maricopa Indian Community, the San Carlos Apache Tribe, the Tonto Apache Tribe, the White Mountain Apache Tribe, the Yavapai-Apache Nation, the Yavapai-Prescott Tribe, and the Pueblo of Zuni, hereinafter referred to as the Tribes, have been identified

pursuant to 36 CFR 800.1(c)(2)(iii) as Interested Parties to this undertaking and have been invited to participate in consultation and to concur in this Agreement, and

WHEREAS, FS and BLM have sought public comment on the effects of the undertaking on historic properties in accordance with their procedures for implementing the National Environmental Policy Act (NEPA),

NOW, THEREFORE, the FS, BLM, Corps, and SHPO agree that the Project shall be administered in accordance with the following stipulations in order to satisfy Section 106 responsibilities for all aspects of the Project.

STIPULATIONS

The FS shall ensure that the following measures will be carried out.

I. EVALUATION, AND EFFECT DETERMINATION

- A. FS, in consultation with BLM and SHPO, shall ensure that determinations of National Register eligibility will be made in accordance with 36 CFR 800.4c for all historic properties within the Project area. FS shall also ensure that these determinations will be made in consideration of information and comments received from consultation with the Tribes regarding the identification of historic properties having traditional cultural or religious significance within the project area.
- B. FS, in consultation with BLM and SHPO and in consideration of information and comments received from the Tribes regarding those historic properties having traditional cultural or religious significance, will apply the criteria of Effect and of Adverse Effect in 36 CFR 800.9 to all historic properties within the Project area.
- C. FS has consulted and will continue to consult with the Tribes regarding cultural affiliations of properties within the Project area and will consult further regarding appropriate procedures for the recovery, analysis, treatment, and disposition of Human Remains, Associated Funerary Objects, Sacred Objects, and Objects of Cultural Patrimony in accordance with the provisions of 43 CFR 10 implementing Section 3c of the Native American Graves Protection and Repatriation Act (NAGPRA). Specific information regarding the location, nature, or character of those properties identified as having traditional cultural or religious significance to the Tribes will be withheld from public disclosure and not released without Tribal permission.

II. PREPARATION OF DATA RECOVERY AND MONITORING PLANS

- A. Hereafter, for the purposes of this Agreement, the historic properties within the Project Area shall be divided into two classes by time period, Prehistoric Era and Historic Era, in order to facilitate the development of appropriate types of treatment for each property type.
- B. FS, in consultation with BLM and SHPO, shall ensure the development of a comprehensive Treatment Plan for the mitigation of anticipated effects on historic properties within the project area of potential effect. This Treatment Plan shall include separate and equivalent Data Recovery Plans are prepared for both the eligible prehistoric era historic properties and the historic era historic properties. In addition, a Monitoring and Discovery Plan will be developed for the mitigation of anticipated effects on historic properties that will result from Project related activities. Further, if appropriate, FS, in consultation with BLM and SHPO and in consideration of information received from the Tribes, will ensure the development of a Treatment Plan for the mitigation of anticipated effects on any historic properties having traditional cultural or religious significance that will result from the Project and any related uses and activities.
- C. The Data Recovery Plans shall be consistent with the Secretary of Interior's Standards and Guidelines (48 FR 44716-44742) and the Council's handbook *Treatment of Archaeological Properties* and guidance of the Department of Agriculture Forest Service.
- D. The Data Recovery Plans shall specify, at a minimum:
1. The properties to be affected by the project and the nature of those effects. Properties identified as having traditional cultural or religious significance to the Tribes shall be reported in project documentation only with Tribal permission.
 2. Research questions and goals that are applicable to the Project area and which can be addressed through data recovery and archival studies, along with an explanation of their relevance and importance. These research questions and goals shall incorporate both the concept of historic contexts as defined in National Register *Bulletin 16* and any specific historic contexts established by FS for the Project area.
 3. Fieldwork and analytical methods and strategies applicable to the Project area, along with an explanation of their relevance to the research questions. Such treatment methods will be developed for each class of property identified in the Project inventory. Treatment methods for properties

identified as having traditional cultural or religious significance to the Tribes shall be reported in project documentation only with Tribal permission.

4. Specification of levels of effort to be expended on the treatment of each property, including methods of sampling, sample size, and procedures for selection of specific sample units.
 5. Methods to be used in data management and dissemination of data, including a proposed schedule for submission of progress, summary, and other reports to appropriate signatories, with outlines of the expected content of each type of report.
 6. Qualifications of consultants employed to undertake the implementation of the Data Recovery Plan
 7. The Prehistoric Era Data Recovery Plan shall include methods and procedures for the expeditious and thorough recovery, analysis, treatment, and disposition of Human Remains, Associated Funerary Objects, and Sacred Objects that reflect any concerns and/or conditions identified as a result of consultations between FS, BLM, and any of the Tribes. At a minimum, these methods shall specify that no destructive analyses of Human Remains shall be permitted, including the removal of samples for use in consumptive chemical analyses or any physical or chemical treatment that would result in the modification, removal, separation, or destruction of any part of the human remains or that would result in any acceleration or delay of their deterioration.
 8. FS shall develop a plan for the disposition of Human Remains and Associated Funerary Objects in consultation with the Tribes and in accordance with Section 3c of NAGPRA and its implementing regulations at 43 CFR 10.3.
- E. The Monitoring and Discovery Plan shall specify, at a minimum:
1. Methods to ensure the protection of properties from surface disturbing Project pre-construction activities.
 2. Methods to ensure the protection of properties from surface disturbing Project activities prior to the completion of mitigative treatments.
 3. Procedures for dealing with discovery of properties or Human Remains during Project implementation, including procedures for reporting

discoveries and identification of lines of authority and responsibility to stop and resume work affected by discoveries.

4. Procedures for assessing damage to properties resulting from Project pre-construction activities.
5. Procedures for consultation to determine appropriate treatment of discoveries and damage to properties resulting from preconstruction activities.
6. Locations of all identified properties and the means by which they will be marked for recognition and avoidance. Properties identified as having traditional or religious significance to the Tribes shall be identified only as areas to be avoided, without any specific description of their nature or character.

III. COMMENT ON DATA RECOVERY AND MONITORING AND DISCOVERY PLANS

- A. Upon receipt of a draft of either Data Recovery Plan or Monitoring and Discovery Plan acceptable to the FS, FS will submit such drafts to BLM and SHPO for review. BLM and SHPO will have 30 days from receipt to review and provide comments to FS. FS will also forward such drafts to the Tribes, who are invited to provide comments.
- B. FS will review all comments and specify appropriate revision to the Plans. Such revisions will be distributed by FS to BLM, SHPO, and the Tribes for review. The consulting parties will have 20 days from receipt to review and comment on the revisions. If no comments are received within this period, the FS may assume that the consulting parties concur with the revisions.
- C. Following review, FS will prepare final revisions, taking into consideration all comments. FS will ensure that all such revisions are incorporated into the final Plans.
- D. Once SHPO has concurred with the final Plans, FS shall issue authorization to proceed with their implementation.
- E. Final Plans will be provided to the signatories of this Agreement and to the Tribes.

IV. PROJECT IMPLEMENTATION

- A. FS or BLM, as appropriate, may issue authorization to proceed with surface disturbing pre-construction activities in those portions of the project area that contain prehistoric era or historic era historic properties, subject to the avoidance of those properties and the implementation of the Monitoring and Discovery Plan.
- B. Implementation of the Monitoring and Discovery Plan will be based on the presence of properties that are not directly affected by Project-related pre-construction activities and either an evaluation of the probability of discovery or the occurrence of discovery.
- C. FS or BLM, as appropriate, may issue authorization to proceed with Project implementation once the agreed-upon fieldwork/treatment specified in the Data Recovery Plans has been completed, subject to acceptance of the adequacy of the work performed under those Plans and subject to the conditions of the Monitoring and Discovery Plan, as appropriate. FS acceptance, in consultation with BLM and SHPO, will be based on field inspection and review of a Preliminary Report documenting the accomplishment of the Data Recovery Plans.
- D. Such Preliminary Reports shall contain, at a minimum:
 - 1. Discussion of the methods and treatments applied to each property with an assessment of the degree to which these methods and treatments followed the direction provided by the Data Recovery Plans.
 - 2. Topographic site plans for each property depicting all features and treatment areas.
 - 3. Draft or final plans of all excavated features.
 - 4. Summary descriptions of all recovered artifacts and other materials, by class.
 - 5. Summary descriptions of all recovered data classes, as identified in the Data Recovery Plans.
 - 6. A final assessment of the accomplishment of goals established in the Data Recovery Plans regarding the recovery of all identified data classes.

7. Discussion of the further analyses to be undertaken for the Final Report, including any proposed changes in methods or levels of effort from those proposed in the Data Recovery Plans.
8. A schedule for the completion of all analyses and submission of the Final Report.

V. CHANGES IN THE AREA OF POTENTIAL EFFECT

- A. If during the course of Project planning, a change in the area of potential effect is determined to be necessary, FS in consultation with BLM shall notify SHPO, the Council, and the Tribes and ensure that any such addition(s) outside the original survey area be inventoried in a manner consistent with the prior inventory.
- B. Where no historic properties will be affected, FS in coordination with BLM shall consult with SHPO on the adequacy of the inventory and on determinations of eligibility and avoidance procedures, if applicable, for any sites requiring protection from Project activities. SHPO will provide comment within 20 days of receipt. If no such comment is received within 20 days, FS shall assume concurrence. If FS, BLM, and SHPO agree to the adequacy of the documentation, FS or BLM, as appropriate, may issue authorization to proceed with construction or use of the additional area. If SHPO objects to any element of the documentation, FS shall consult to resolve the objection. Objections must be specifically identified and the reasons for objection documented. If the objection cannot be resolved, FS shall consult with the Council in accordance with Stipulation VII.
- C. Where historic properties will be affected, FS will initiate the review, evaluation, and consultation requirements and procedures identified in Stipulations IA, IB, and IC.
- D. Upon acceptance of the inventory documentation as adequate by FS and SHPO, FS in consultation with BLM will authorize the preparation of a Data Recovery Plan and/or Monitoring and Discovery Plan, as appropriate, based on the determinations of property eligibility and effect. Any such Plan(s) shall be consistent with the original Plans and, once accepted, will be considered a supplement to those Plans.
- E. Any Plan(s) prepared under these conditions will be subject to the review procedure identified in Stipulation III.

VI. CURATION

- A. FS shall ensure that all records and materials resulting from identification and data recovery efforts are curated in accordance with standards and guidelines generated by 36 CFR Part 79 with consideration of any claims or conditions recognized as a result of consultation with the Tribes, according to the provisions of NAGPRA.
- B. Upon receipt of any Preliminary Report, the Tribes shall be afforded an opportunity to review any and all recovered materials.
- C. All Human Remains, Associated Funerary Objects, Sacred Objects, and Objects of Cultural Patrimony, including those to be returned, reburied, or otherwise repatriated to the Tribe(s) having established claims of affiliation or descent under NAGPRA, shall be treated with dignity and respect at all times. Further, any specific treatments identified by the affiliated Tribe(s) for application to claimed materials prior to disposition will be observed. Disposition of these remains and objects shall be in accordance with the provisions of the Disposition Plan.

VII. DISPUTE RESOLUTION

Should any signatory to this Agreement or other Interested Tribe object to any action(s) or plan(s) provided for review pursuant to this Agreement, FS shall consult with the objecting party within 30 days to resolve the objection. The objection must be specifically identified, and the reasons for objection documented. If FS determines that the objection cannot be resolved, FS shall forward all documentation relevant to the dispute to the Council and notify BLM and SHPO as to the nature of the dispute. Within 30 days of receipt of all pertinent documentation, the Council shall either:

- A. Provide FS with recommendations which FS shall take into consideration in reaching a final decision regarding the dispute; or
- B. Notify FS that it will comment within an additional 30 days in accordance with 36 CFR 800.6(b). Any Council comment provided in response to such a request will be taken into account by FS in accordance with 36 CFR 800.6(c)(2) with reference to the subject of the dispute.
- C. Any recommendation or comment provided by the Council will be understood to pertain only to the subject of the dispute; FS responsibility to carry out all

actions under this Agreement that are not the subject of the dispute will remain unchanged.

VIII. AMENDMENT

Any signatory to this Agreement may request that it be amended, whereupon the parties will consult to consider such amendment in accordance with 36 CFR 800.

IX. TERMINATION

Any party to this Agreement may terminate its participation by providing 30 days' written notice to the other parties. Any consulting party may terminate the Agreement by providing 30 days' notice to the other parties, provided that the parties will consult during that period to seek agreement on amendments or other actions that would avoid termination. In the event of termination, FS, BLM, and Corps will comply with 36 CFR 800.4 through 800.6.

X. FAILURE TO CARRY OUT THE TERMS OF AGREEMENT

In the event that the terms of this Agreement are not carried out, FS, BLM and Corps shall comply with 36 CFR 800.4 through 800.6 with regard to individual actions covered by this Agreement.

XI. SCOPE OF AGREEMENT

This Agreement is limited in scope to the *Cyprus-Miami Leach Facility Expansion Project* and is entered into solely for that purpose. Execution and implementation of this Agreement by the consulting parties and subsequent acceptance by the Council evidences that the Forest Service, Bureau of Land Management, and Corps of Engineers have afforded the Council an opportunity to comment on the Project and its effects on historic properties, and have taken into account the effects of the undertaking on those properties, and have, therefore, satisfied their Section 106 responsibilities for this undertaking.

CONSULTING PARTIES

USDA Forest Service

By:

for Charles W. Cartwright, Jr.

Title: Regional Forester, Southwestern Region

Date:

August 13, 1997

USDI Bureau of Land Management

By:

Michael A. Taylor

Title: Phoenix Field Office Manager

Date:

August 19, 1997

United States Army Corps of Engineers

By:

Robert L. Davis

Title: Colonel, Corps of Engineers, District Engineer, Los Angeles District

Date:

18 SEP 97

State Historic Preservation Officer

By:

James W. Gorman

Title:

AZSHPO

Date:

28 October 1997

ACCEPTED for the Advisory Council on Historic Preservation

By:

Ex. Dir.

Date:

12/23/97

ATTACHMENT A

**National Register Eligible Properties within the
Area of Potential Effect
for the
Cyprus-Miami Leach Facility Expansion Project**

Prehistoric Properties

	Property Type
AZ V:9:53 ASM / AR-03-12-02-545	temporary residential/resource procurement
AZ V:9:327 ASM	resource procurement/processing
AZ V:9:328 ASM	temporary residential
AZ V:9:329 ASM / AR-03-12-02-543	residential or temporary residential
AZ V:9:330 ASM / AR-03-12-02-544	temporary residential
AZ V:9:332 ASM / AR-03-12-02-546	residential
AZ V:9:333 ASM / AR-03-12-02-533	residential or temporary residential
AZ V:9:336 ASM / AR-03-12-02-536	resource procurement/processing
AZ V:9:338 ASM / AR-03-12-02-537	temporary residential
AZ V:9:342 ASM	temporary residential
AZ V:9:343 ASM	temporary residential
AZ V:9:344 ASM	agricultural
AZ V:9:345 ASM / AR-03-12-02-548	residential/resource procurement/processing
AZ V:9:348 ASM / AR-03-12-02-541	temporary residential/resource procurement

Historic Properties

	Property Type
AZ V:9:177 ASM / AR-03-12-02-935	CCC/WPA
AZ V:9:331 ASM / AR-03-12-02-552	ranching/residential
AZ V:9:334 ASM / AR-03-12-02-534	transportation feature
AZ V:9:337 ASM / AR-03-12-02-547	ranching/residential
AZ V:9:347 ASM / AR-03-12-02-550*	residential
AZ V:9:351 ASM / AR-03-12-02-551	commercial/industrial/residential
AZ V:9:352 ASM*	residential
AZ V:9:353 ASM	residential
AZ V:9:355 ASM	residential
AZ V:9:369 ASM / AR-03-12-02-1336	mining
AZ V:9:370 ASM / AR-03-12-02-1337	mining

* includes non-eligible prehistoric component



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